

Welcome



m.i.t.r.a.

Machines Information Technology Resources Agriculture



M.I.T.R.A. Agro Equipment's Pvt. Ltd.

m.i.t.r.a.
Machines . Information . Technology . Resources . for . Agriculture

Our Products



Grapemaster Blast +



Grapemaster Bullet 550



Grapemaster Bullet 616



Pomemaster Rocket 550



Our Products



Pomemaster Linear



Orange Master



Airotec cyclone



Storm Duster



M.i.T.R.A

Product Training



Blast



**grapes &
pomegranate**

Orange & mangomaster



**Orange & HD
Mangoes**



Airotec

only pomegranate



Linear

GRAPEMASTER BLAST+



- Dimension = L 9.5 ft x W 3.6 ft x H 4 ft
- Tractor HP = **24 HP & Above**
- PTO HP = 16 HP & Above
- Dry Weight = 380 kg
- Pump = 75 LPM Diaphragm Pump
- Fan diameter = 616 mm
- Air Flow = **Average 21666 m³/hr**
- Main Tank = 600 lit
- Rinsing Tank = 25 lit
- Hand wash Tank = 10 lit
- Gearbox = 2 Speed + Neutral
- Safety device = **Pressure relief valve(Pump),
Innova rubber coupling**
- Nozzle + ATR 60) = 12 Nozzle (1.0 Ceramic disc
- Controller = Manual Control Panel



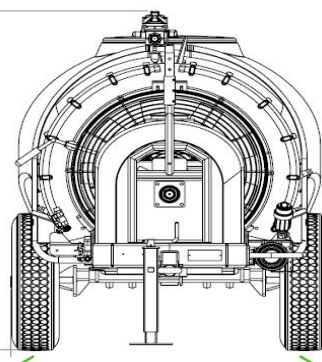
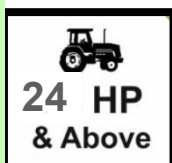
New Features

SS 304 Shell assembly	Increase durability of machine, Rust preventive.
3-axis toebar	Lowest turning radius 9ft with excess angle locking provision.
LED projector light	Helpful while spraying in Night, Operator can see spray coverage.
LED light for water level	Water level can easily visible during night time as well as after water level tube get opaque.
Tank Cleaning	Tank Cleaning sprinkler
New controller	Smooth Operation, Rigid controller mounting
Safety Device	Innova rubber cushion coupling to reduce jerk & Shock PRV = Reduce excess pressure from pump
Perfect air balance	100% coverage

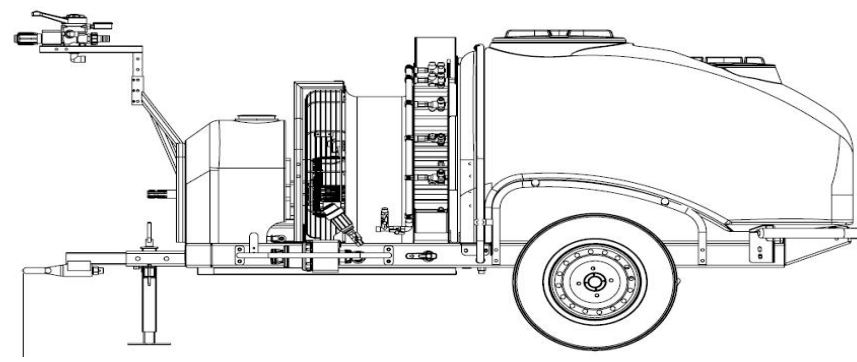
Improved Features

Rinsing Tank Lid	This Lid prevents the Dirt to go inside the Rinsing Tank
Thunder hose for water level	Increase durability
Dimension	

BLAST V4 616

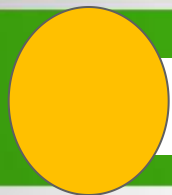


3.6 ft



10.1 ft

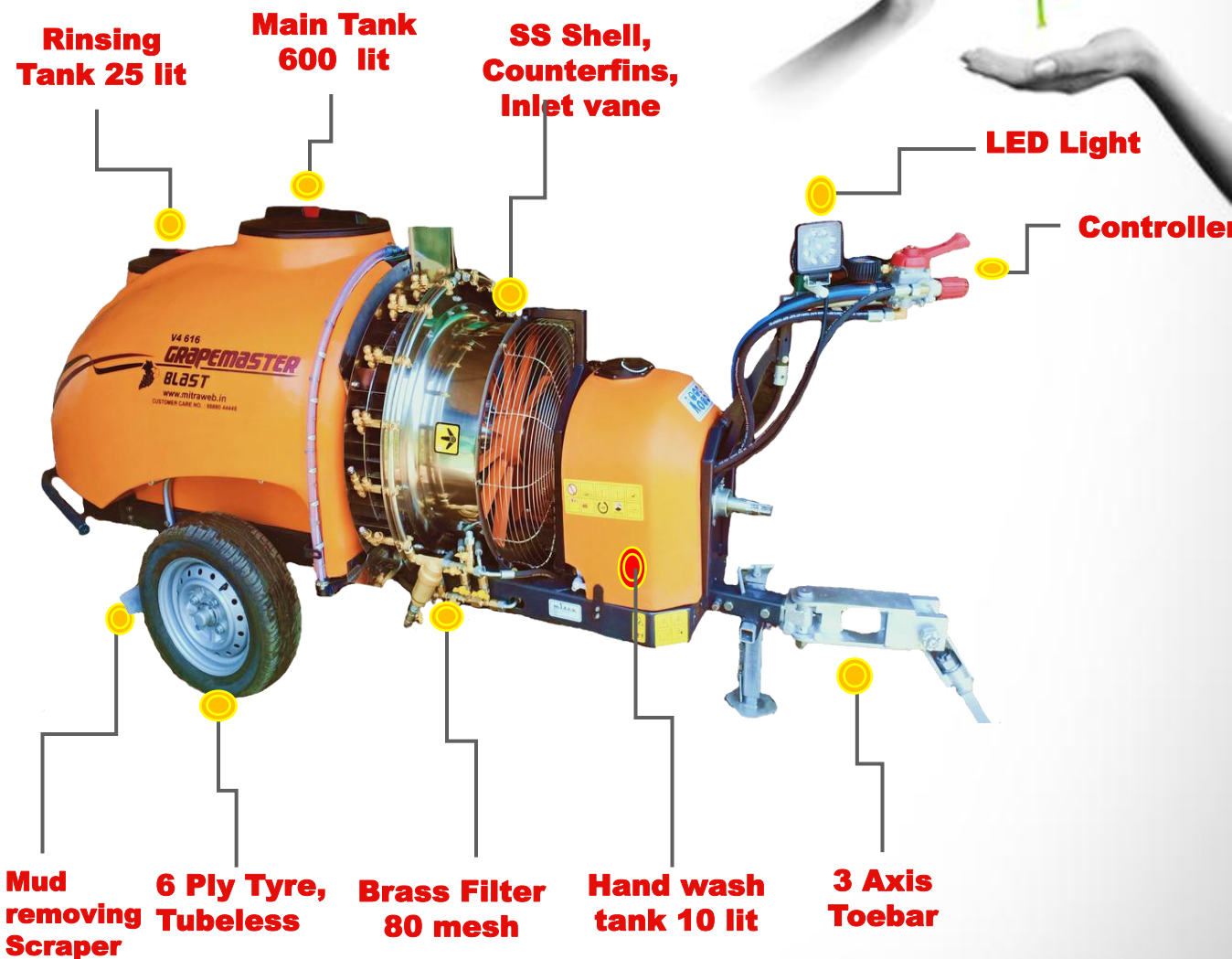
4.3 ft



BLAST KEY PARTS & APPLICABLE CROPS

Technical Specification

Main tank	600 lit
Rinsing tank	25 lit
Hand wash tank	10 lit
Fan	616 mm / 24 inch
Blade no.	9 PPG
Diaphragm Pump	75 LPM
Nozzle	12, M-62
Disc & ATR	1.0 disc / ATR 60
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Tyre	6 ply rating, Tubeless
Tyre axel	Track Width Adjustable
Safety devices	Innova rubber coupling & PRV valve
Dry weight	380 Kg
Air output	32 m/sec or 115 Kmph



Grape



Orange



Apple



Lychee



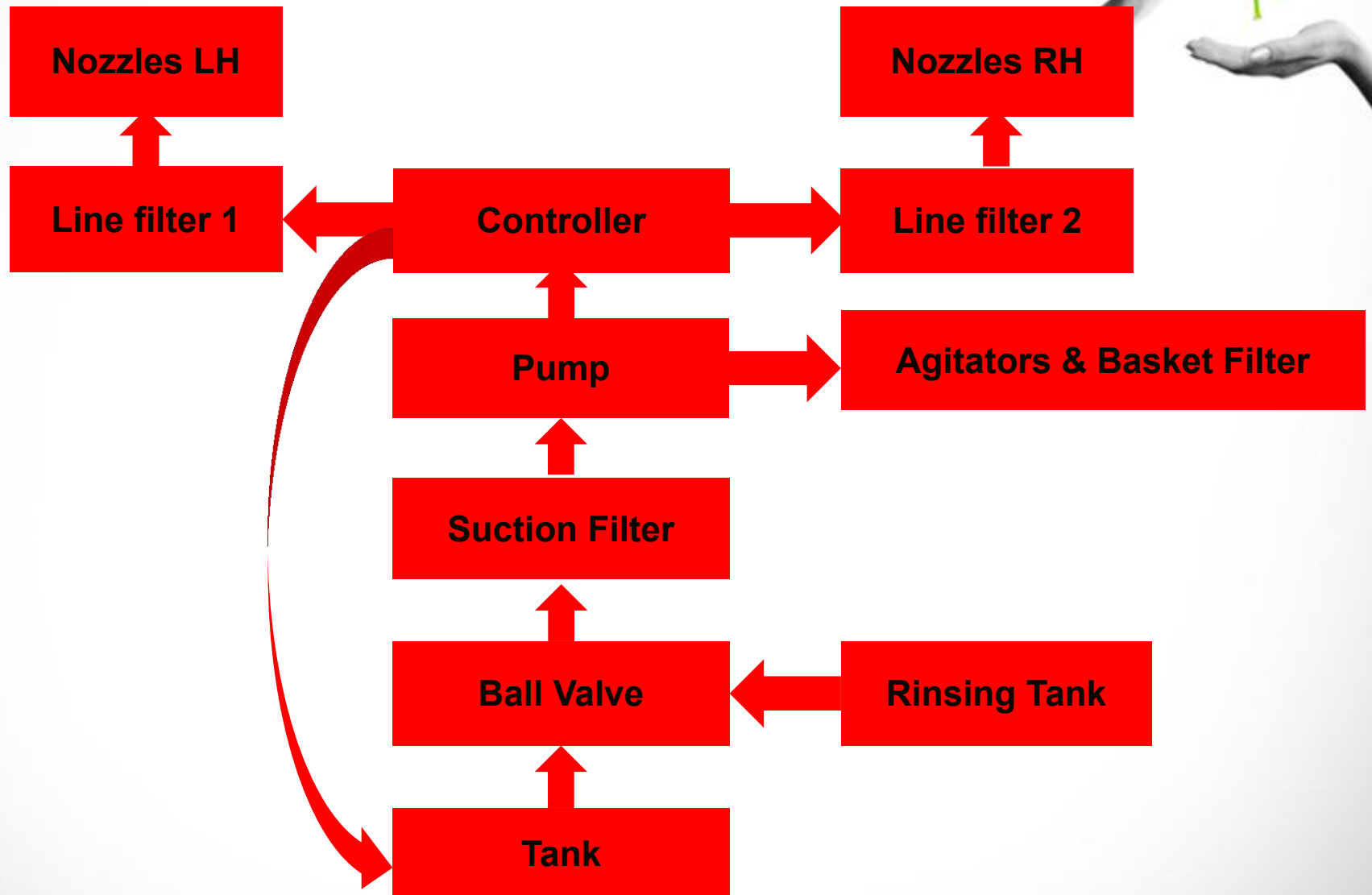
Pome



SILENT FEATURES

- Works freely on 24 HP tractor
- 100% Coverage
- Best in Dipping/PGR Application
- Best in Crop Protection
- Can reduce number of spray rounds
- Integrated control Panel
- 75 LPM Diaphragm Pump works smoothly with Indian water
- Innova Cushion Rubber coupling work as shock absorber in Field
- 2 Speed + Neutral Gear box helps to choice in air output required as per climatologically as well as agronomical conditions

Hydraulic flow circuit Blast



GRAPEMASTER BULLET ++

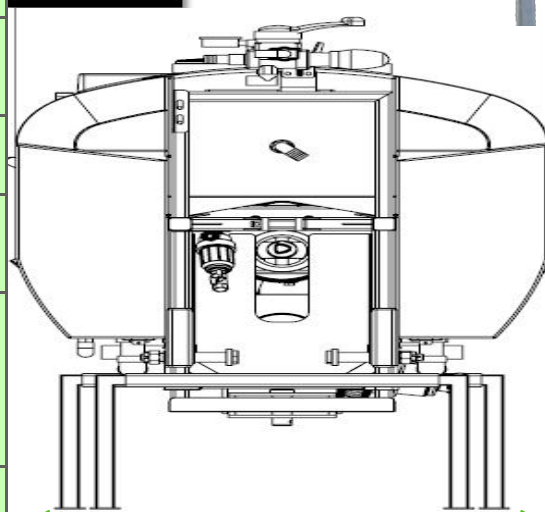
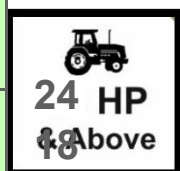
- Dimension = L 4.4 ft x W 3 ft x H 4.7 ft
- Tractor HP = 24 HP & Above
- PTO HP = **16 HP & Above**
- Dry Weight = 220 kg
- Pump = **71 LPM Diaphragm Pump (YP)**
- Fan diameter = **616 mm**
- Air Flow = **Average 21666 m³/hr**
- Main Tank = 200 lit
- Gearbox = 2 Speed + Neutral
- Safety device = **Pressure relief valve (Pump).**
- Nozzle = 12 Nozzle
- (1.0 Ceramic disc + ATR 60)
- Controller = Manual Control Panel



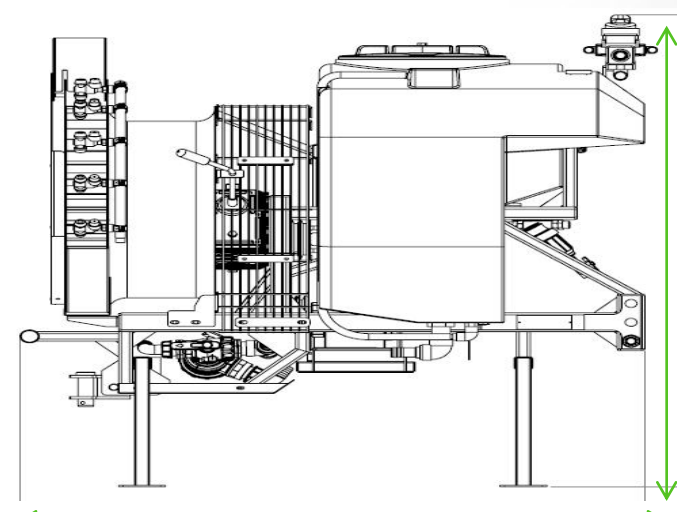
BULLET V4 616



SS 304 Shell assembly	Increase durability of machine, Rust preventive.
LED projector light	Helpful while spraying in Night, Operator can see spray coverage.
LED light for water level	Water level can easily visible during night time as well as after water level tube get opaque.
New controller	Smooth Operation, Strong controller mounting
Safety Device	PRV = Reduce excess pressure from pump
Perfect air balance	100% coverage



2.95 ft

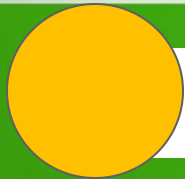


4.3 ft

4.8 ft

Improved Features

Thunder hose for water level	Increase durability
Bush for mounting pin	Increase life of machine, Solve the vibration problem due to mounting hole get oblong.
Controller hose position	This will prevent the controller hose get cut due to Tractor Fender.
Line filter position	Easy for operating



Bullet key parts & Applicable CROPS



Technical Specification

Main tank	200 lit
Fan	616 mm / 24 inch
Blade no.	9 PPG
Diaphragm Pump	65/71 LPM
Nozzle	12, M-62, M82
Disc & ATR	1.0 disc / Pink ATR 60°
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Safety devices	Pressure relief valve
Dry weight	220 Kg
Air output	32 m/sec or 115 KmpH



Applicable Crop



Grape

Orange

Apple

Pome

SILENT FEATURES



- **Works freely on 24HP and Above Tractors**
- **Light Weight**
- **No problem of turning radius**
- **Works smoothly in muddy condition**
- **Best in PGR application**
- **Best in Plant Protection**
- **Easy handling**
- **Easy extra tank trailed attachment**
- **Integrated Control Panel**
- **Best Air conveyer system helps for distribution on Both side**
- **2 Speed + Neutral gear Box helps to choice in air output**
- **In late vanes and recovery plate available**

GRAPMASTER BULLET +

- Dimension = L 4.4 ft x W 3 ft x H 4.6 ft
- Tractor HP = 18 HP & Above
- Dry Weight = 210 kg
- Pump = **55 LPM Diaphragm Pump**
- Fan diameter = **550 mm**
- Air Flow = **Average 18000 m3/hr**
- Main Tank = 200 lit
- Gearbox = 2 Speed + Neutral
- Safety device = **Pressure relief valve (Pump).**
- Nozzle = 10 Nozzle
- (1.0 Ceramic disc + ATR 60)
- Controller = Manual Control Panel



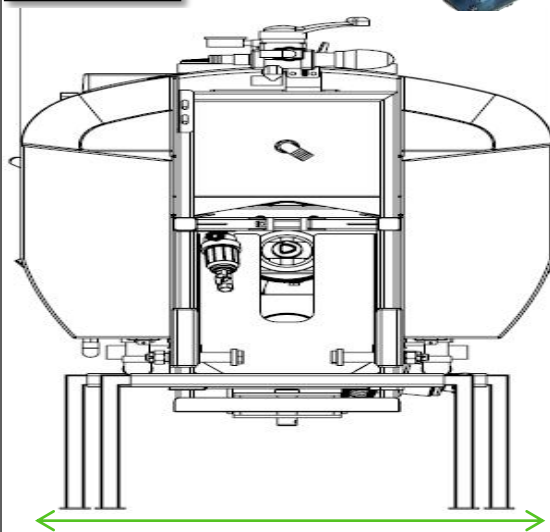
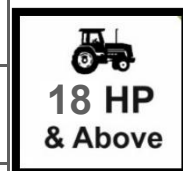
BULLET V4 550



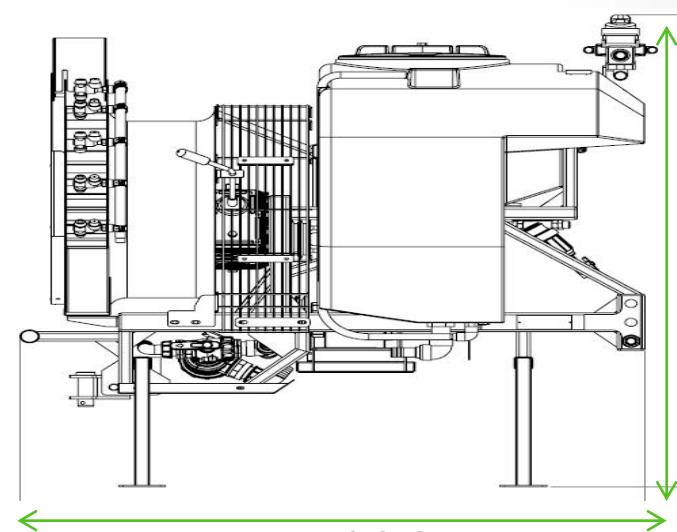
SS 304 Shell assembly	Increase durability of machine, Rust preventive.
LED projector light	Helpful while spraying in Night, Operator can see spray coverage.
LED light for water level	Water level can easily visible during night time as well as after water level tube get opaque.
New controller	Smooth Operation, Strong controller mounting
Safety Device	PRV = Reduce excess pressure from pump
Perfect air balance	100% coverage

Improved Features

Thunder hose for water level	Increase durability
Bush for mounting pin	Increase life of machine, Solve the vibration problem due to mounting hole get oblong.
Controller hose position	This will prevent the controller hose get cut due to Tractor Fender.
Line filter position	Easy for operating



2.95 ft



4.3 ft

4.6
ft

BULLET KEY PARTS & APPLICABLE CROPS



Fan	550 mm / 22 inch
Blade no.	9 PPG
Diaphragm Pump	55 LPM
Nozzle	10, M-62
Disc & ATR	1.0 disc / Pink ATR 60°
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Safety devices	Pressure relief valve
Dry weight	210 Kg
Air output	22 m/sec or 79.2 Kmph



Grape



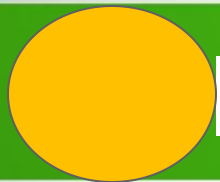
Orange



Apple



Pome

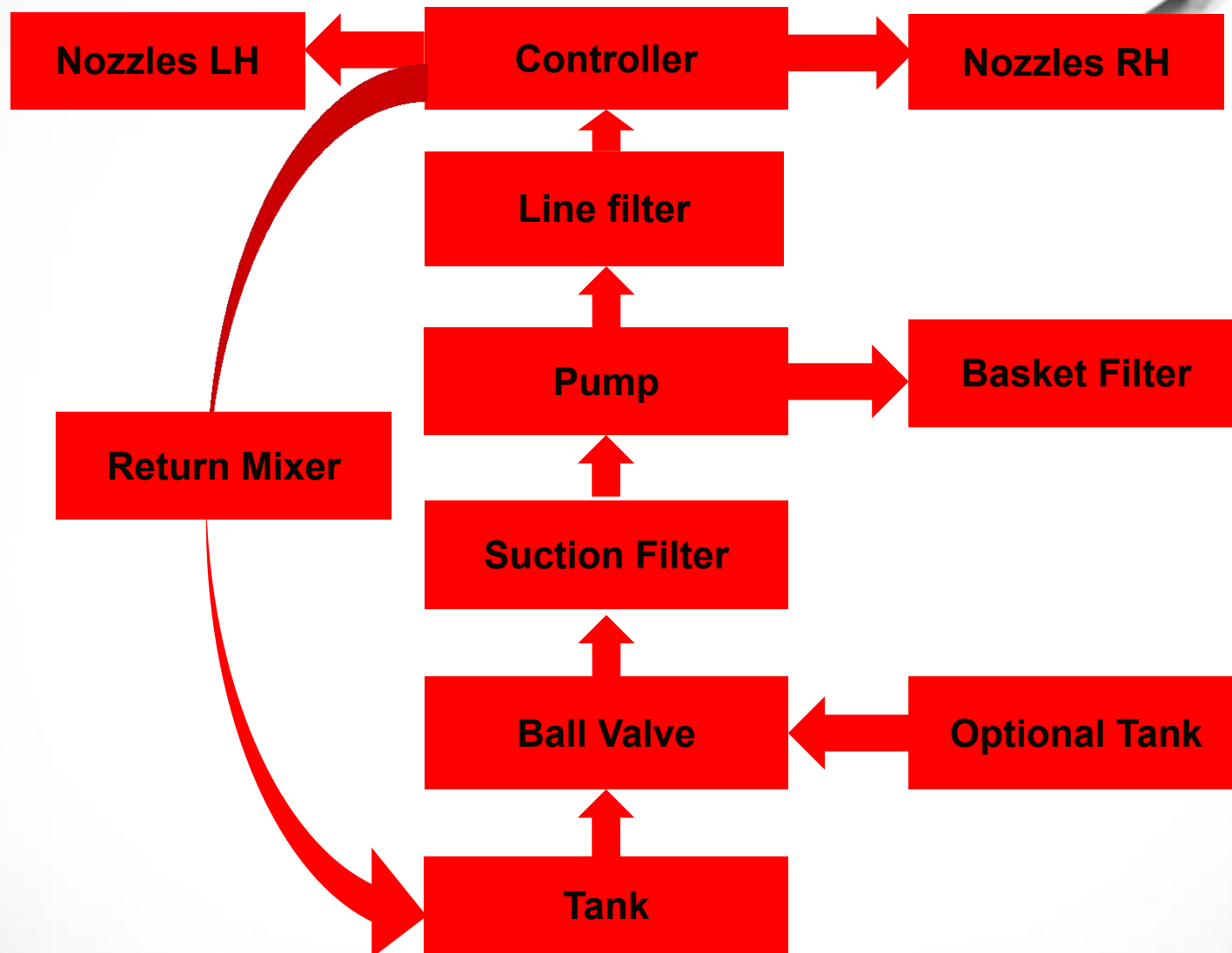


SALIENT FEATURES



- **Works freely on 18 HP and above tractors**
- **Light Weight**
- **No problem of turning radius**
- **Works smoothly in muddy condition**
- **Best in PGR application**
- **Best in Plant Protection**
- **Easy handling**
- **Easy Extra Tank trailed Attachment**
- **Integrated Control Panel**
- **Best Air conveyer system helps for distribution on Both side**
- **2 Speed + Neutral gear Box helps to choice in air output**
- **In late vanes and recovery plate available**

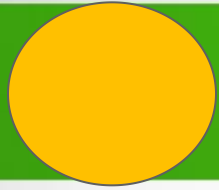
HYDRULIC FLOW CIRCUIT BULLET



GRAPEMASTER ECO++

- Dimension = L 3.58 ft x W 2.98 ft x H 3.82 ft
- Tractor HP = 24 HP & Above
- PTO HP = **16 HP & Above**
- Dry Weight = 160 kg
- Pump = **71LPM Diaphragm Pump**
- Fan diameter = **616 mm**
- Air Flow = **Average 21000 m3/hr**
- Gearbox = 2 Speed + Neutral
- Nozzle = 12 Nozzle
(1.0 Ceramic disc + ATR 60)
- Controller = Manual Control Panel





SILENT FEATURES



- **Works freely on 24HP and Above Tractors**
- **Light Weight**
- **No problem of turning radius**
- **Works smoothly in muddy condition**
- **Best in PGR application**
- **Best in Plant Protection**
- **Easy handling**
- **Calibrated Return Technology**
- **Integrated Control Panel**
- **2 Speed + Neutral gear Box helps to choice in air output**

GRAPEMASTER ECO+

- Dimension = L 3.5 ft x W 2.9 ft x H 3.7 ft
- Tractor HP = 18 HP & Above
- Dry Weight = 150 kg
- Pump = 55 LPM Diaphragm Pump
- Fan diameter = 550 mm
- Air Flow = Average 18000 m³/hr
- Gearbox = 2 Speed + Neutral
- Nozzle = 10 Nozzle
(1.0 Ceramic disc + ATR 60)
- Controller = Manual Control Panel





SALIENT FEATURES

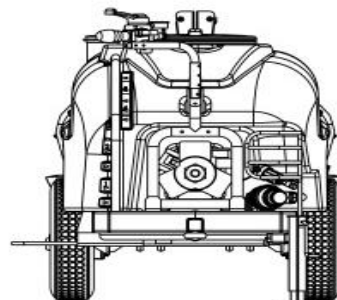
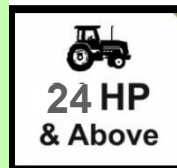
- **Works freely on 18 HP and above tractors**
- **Light Weight**
- **No problem of turning radius**
- **Works smoothly in muddy condition**
- **Best in PGR application**
- **Best in Plant Protection**
- **Easy handling**
- **Integrated Control Panel**
- **Best Air conveyer system helps for distribution on Both side**
- **2 Speed + Neutral gear Box helps to choice in air output**



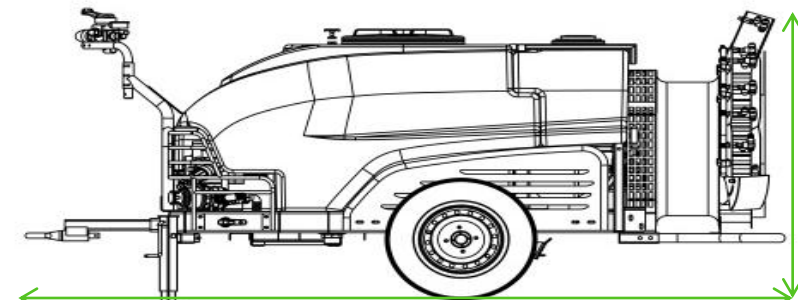
Grapemaster AIROTEC TURBO - 600

Technical Specification

Main tank	600 lit
Rinsing tank	70 lit
Handwash tank	20 lit
Fan	616 mm / 24 inch
Blade no.	9 PPG
Diaphragm Pump	75 LPM
Nozzle	12, M-62/M-82
Disc & ATR	0.8/1.0 & ATR 60°
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Tyre	6 ply rating, Tubeless
Tyre axel	3 way Adjustable
Safety devices	Innova rubber coupling & PRV valve
Dry weight	400 Kg
Air output	32 m/sec or 115 KmpH
Dimension	
L x W x H (M)	3.1 x 1.1 x 1.3



1.1 M



3.1 M

1.3 M

AIROTEC KEY PARTS & APPLICABLE CROPS



**Applicable
Crop**



Grape



Orange



Apple



Lychee



Olive



Peach

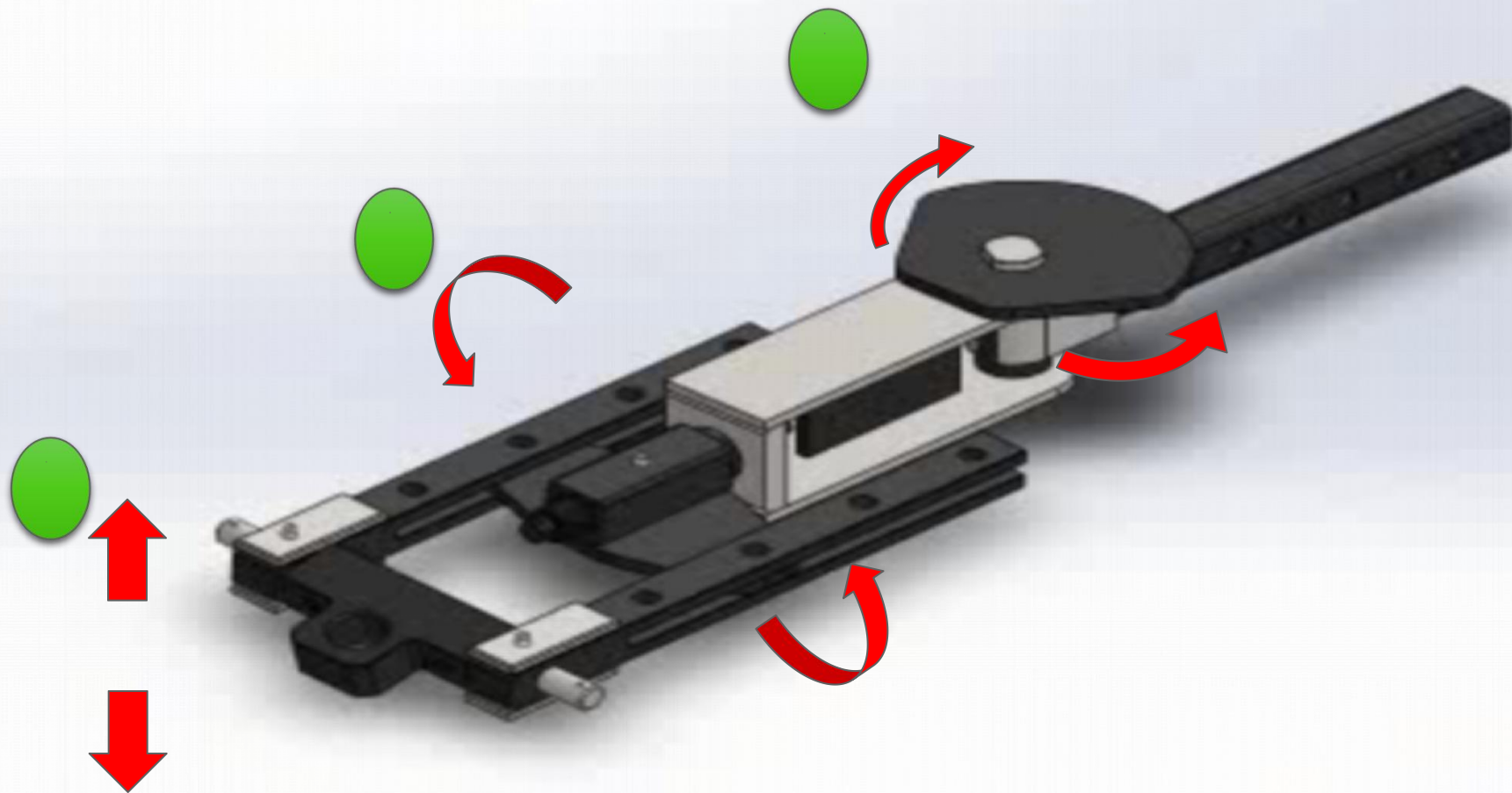


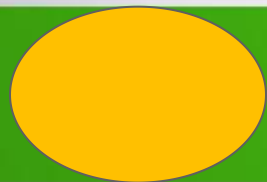
Plum



Pome

3-Axis Toebar





SALIENT FEATURES



Rear Air conveyor : Highest air output with perfect air balancing and Lowest power consumption.

Lowest Turning radius : 3 Axis tow bar best for turning in Low spacing Vineyards.

Compact tank : HDPE ,10 mm wall thickness, 4 Compartments, Compact size tank with Dual water tube level indicator.

Cross Agitation : High pressure jet for uniform chemical mixing, thus maintain equal chemical concentration throughout spraying.

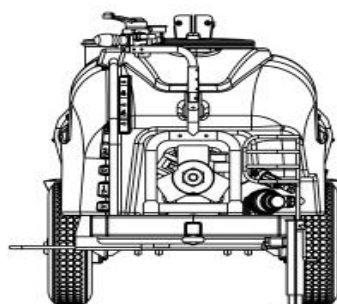
3 way Adjustable tyre : Track width, Height & Tyre position adjustment

Safety Devices : Innova coupling reduces vibration & jerk coming from tractor, Pressure relief valve Automatically open at 40 bar pressure to protect pump from excessive pressure damage.

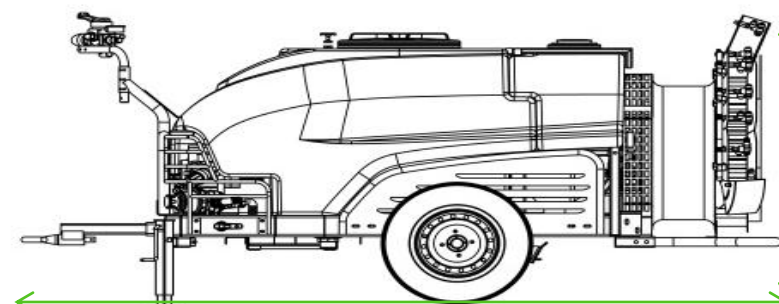
AIROTEC TURBO DF - 600

Technical Specification

Main tank	600 lit
Rinsing tank	70 lit
Handwash tank	20 lit
First Fan	616 mm with 9 Blade
second Fan	616 mm with 3 Blade
Diaphragm Pump	75 LPM
Nozzle	12, M-62/M-82
Disc & ATR	0.8/1.0 & ATR 60°
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Tyre	6 ply rating, Tubeless
Tyre axel	3 way Adjustable
Safety devices	Innova rubber coupling & PRV valve
Dry weight	400 Kg
Air output	32 m/sec or 115 KmpH
Dimension	
L x W x H (M)	3.1 x 1.1 x 1.3



1.1 M



3.1 M

1.3 M




SALIENT FEATURES

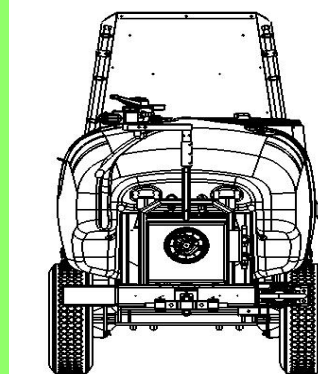
Sr. No.	Key Feature	Information
1	Back Side fan	High Air output with Perfect balancing of air at both side with lowest power consumption
2	Lowest turning Radius	Best for Turning operations in low spacing Vineyards, 3-Axis tow bar
3	Safety devices	Innova rubber coupling, Shear bolt on Wide Angle PTO shaft & Pressure relieaf valve
4	Air conveyor	Air Cone & Outlet Mesh
5	Imported Tank	
	Material	HDPE , 10 mm Thickness, Antichemical coating on Inner surface
	Main Tank	Big lead for water filling
		Medium lid for Chemical Mixing Powder mixer
	Handwash Tank	20 Lit handwash tank of clean water for cleaning
	Rinsing Tank	70 lit Rinsing tank for cleaning tank & hydraulic circuite after spraying
6	Cross Agitation System	Proper agitation of Chemical at the time spraying
7	Front & Side tube level	Front For tractor driver & Side water tube level at time of water filling
8	3-Way Adjustable Wheels	Trackwidth, Height, Tyre position forward & Reverse
9	Compact Machine	Lowest Length= 7.5 ft , Width = 3.6 ft, Height = 4.3 ft
12	Material & Coatings	
	Air conveyor	SS 304 Material --> Inlet Mesh, Shell, Outlet Mesh, Front plate, Back Plate, Top & Bottom Deflector
	Chassis	HDG, Powder coating --> Chassis, Pump Frame, Gear box mounting frame, Side Bar, Rear Bumper
13	Light weight Machine in all back fan Machines in market	400 kg(Dragone = 460 kg, Maggio = 470 kg, Caffini = 450 kg)

AIROTEC TURBO - 600

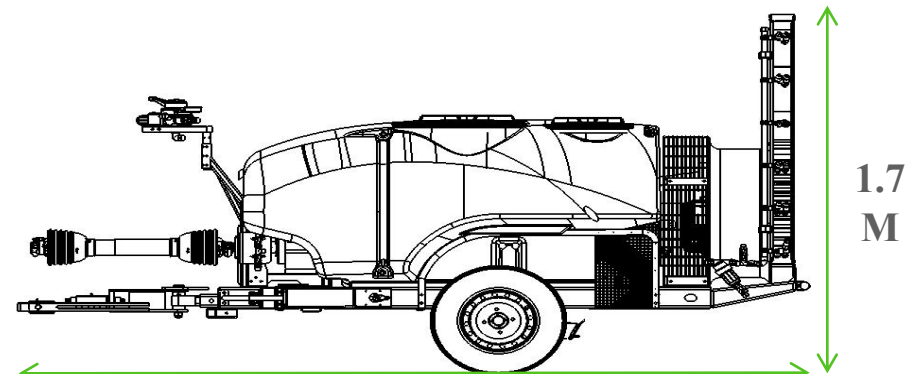
Pomemaster

Technical Specification

Main tank	600 lit
Rinsing tank	70 lit
Handwash tank	20 lit
Fan	616 mm / 24 inch
Blade no.	9 PPG
Diaphragm Pump	75 LPM
Nozzle	12, M-62
Disc & ATR	0.8/1.0
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Tyre	6 ply rating, Tubeless
Tyre axel	3 way Adjustable
Safety devices	Innova rubber coupling & PRV valve
Dry weight	400 Kg
Air output	32 m/sec or 115 Kmph
Dimension	
L x W x H (M)	3.1 x 1.1 x 1.7



1.1 M

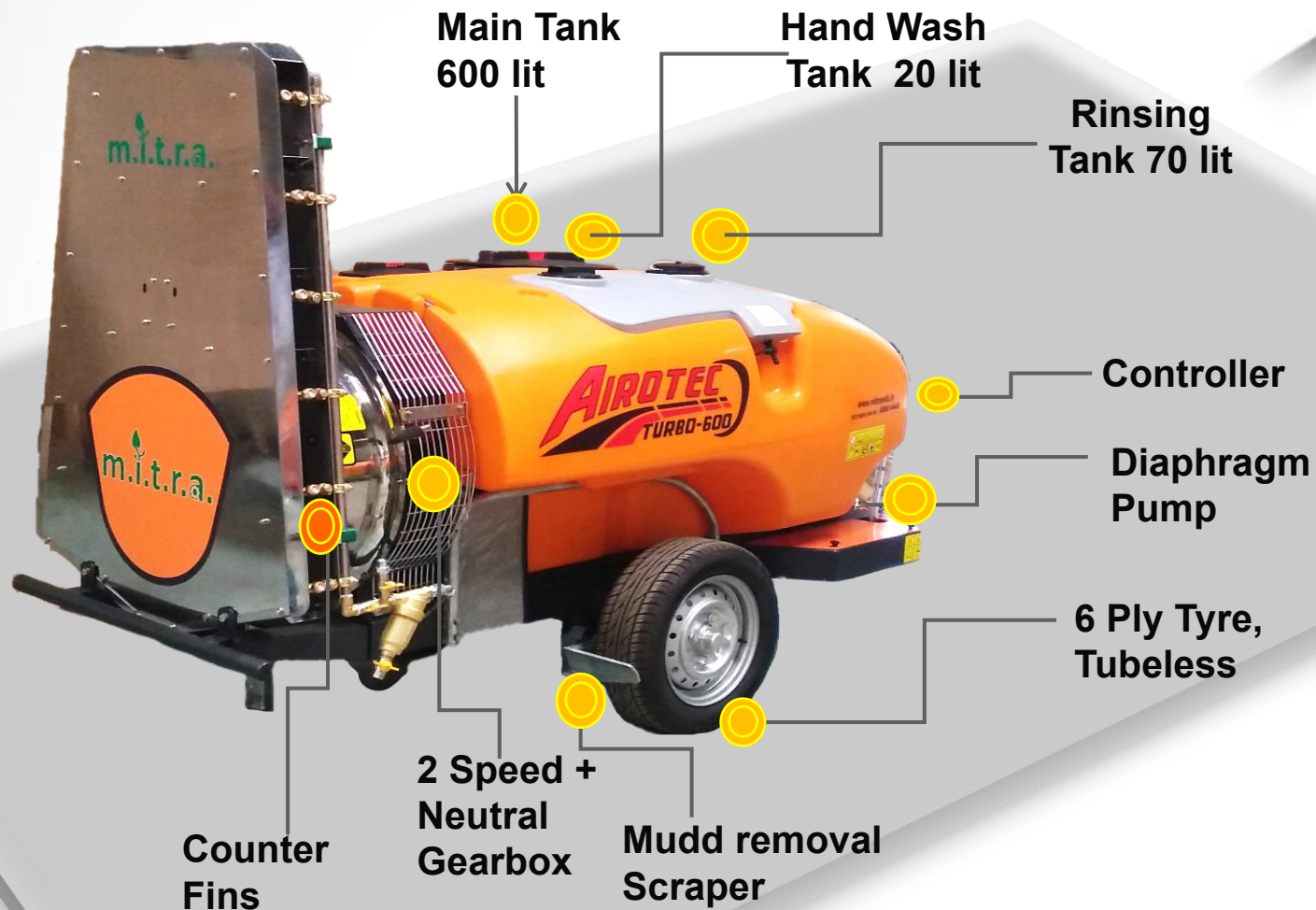


3.1 M

1.7
M



AIROTEC KEY PARTS & APPLICABLE CROPS




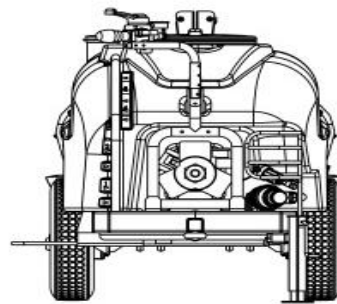
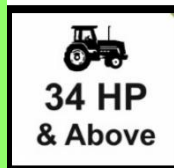
Applicable Crop



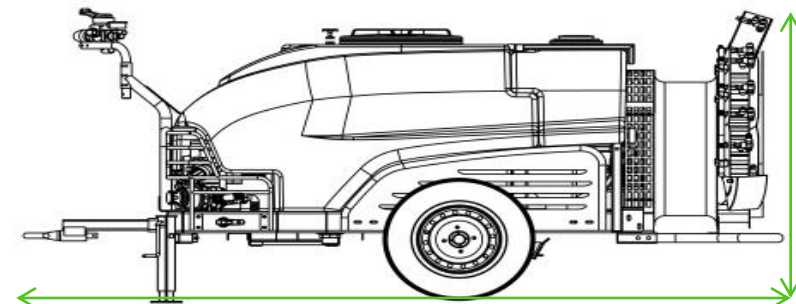
A composite image featuring a large green leaf held by three hands, a green horizontal bar, and a small image of a car engine at the bottom.

Technical Specification

Main tank	1000 lit
Rinsing tank	70 lit
Handwash tank	20 lit
Fan	616 mm / 712 MM
Blade no.	9 PPG
Diaphragm Pump	75 LPM
Nozzle	12/14, M-62/M-82
Disc & ATR	0.8/1.0 & ATR 60°
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Tyre	8 ply rating
Tyre axel	3 way Adjustable
Safety devices	Innova rubber coupling & PRV valve
Dry weight	570 Kg
Air output	38 m/sec or 137 KmpH
Dimension	
L x W x H (M)	3.7 x 1.15 x 1.3



1.15 M



3.7 M

1.3 M

AIROTEC KEY PARTS & APPLICABLE CROPS



**Applicable
Crop**



Grape



Orange



Apple



Lychee



Olive



Peach




Plum

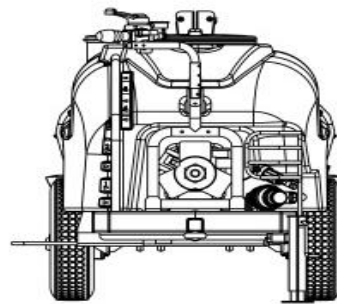
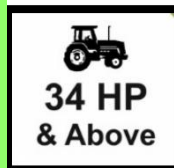


Walnut

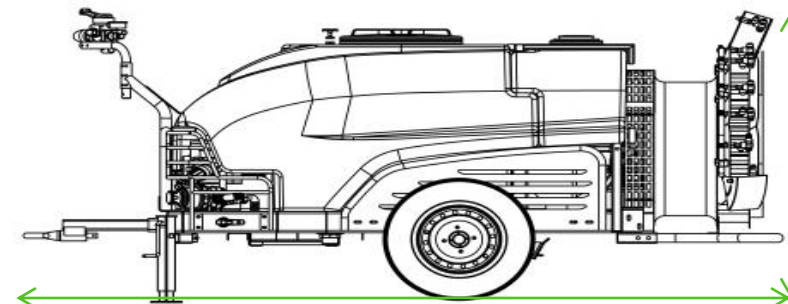
A vibrant green leaf is the central focus, held gently by three hands. Two hands are positioned on the left and right sides, with fingers slightly curled as if supporting the leaf. A third hand is at the bottom, palm up, holding the leaf's stem. The background is a solid, bright green, creating a strong visual connection to nature and environmental themes.

Technical Specification

Main tank	1500 lit
Rinsing tank	115 lit
Handwash tank	12 lit
Fan	712 MM
Blade no.	9 PPG
Diaphragm Pump	75 LPM
Nozzle	14, M-62/M-82
Disc & ATR	0.8/1.0 & ATR 60°
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Tyre	8 ply rating
Tyre axel	3 way Adjustable
Safety devices	Innova rubber coupling & PRV valve
Dry weight	570 Kg
Air output	38 m/sec or 137 KmpH
Dimension	
L x W x H (M)	3.69 x 1.29 x 1.4



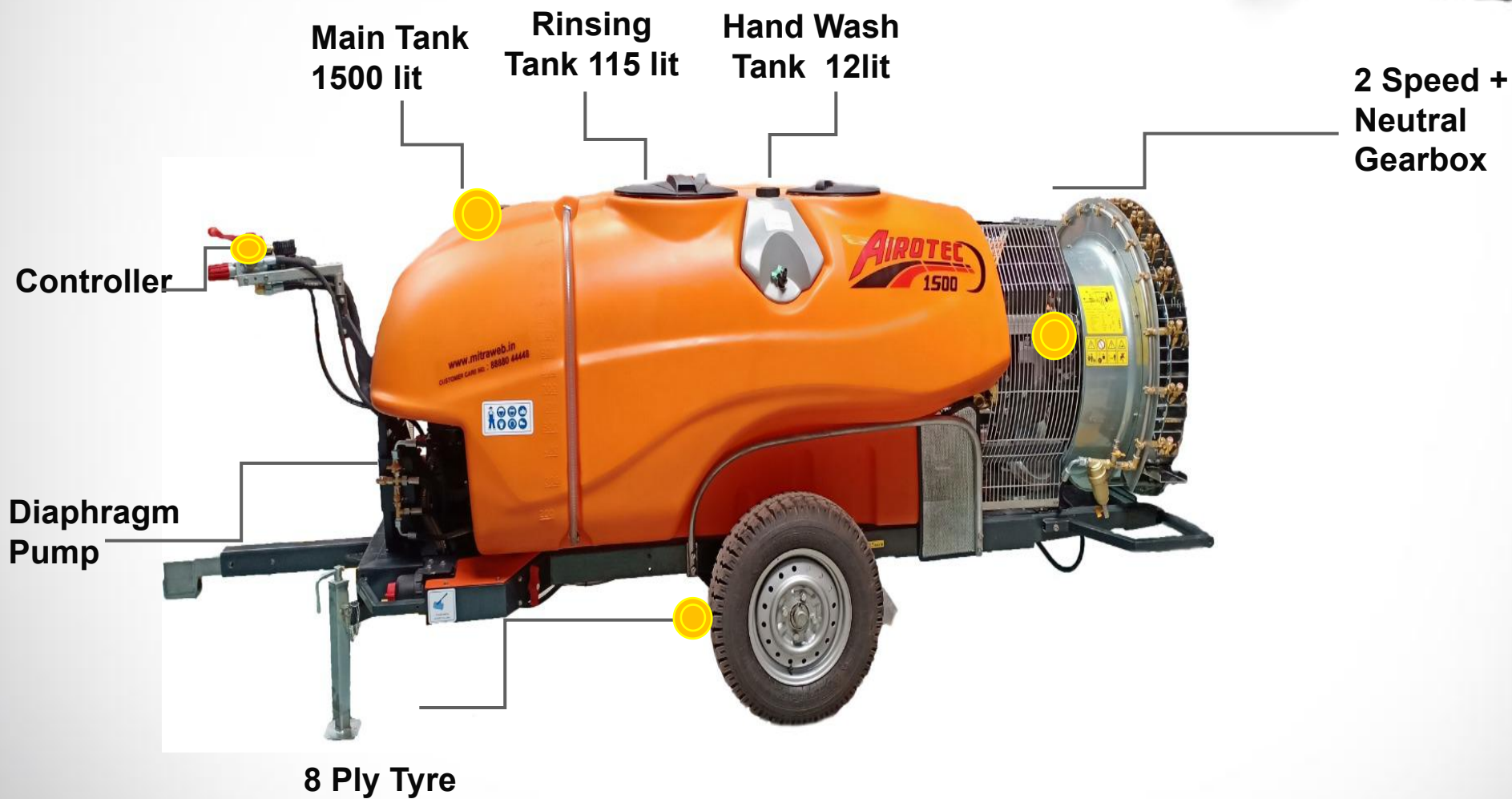
1.29 M



3.69 M

1.4 M

AIROTEC KEY PARTS & APPLICABLE CROPS



**Applicable
Crop**



Advanced Features



- **Backside fan with lowest power consumption**
- **Cross Agitation for excellent mixing of chemicals**
- **Imported HDPE 4 compartment High durable tank**
- **Stainless steel back shell**
- **Tubeless tires, effective mud scrappers are provided**
- **Stronger bumper for tank protection**

Mangomaster Airotec Cyclone



Technical Specification

Main tank	1500 lit
Rinsing tank	115 lit
Handwash tank	12 lit
Impeller Dia	Front & Rear 450 mm
Diaphragm Pump	75 LPM
Front conveyor Nozzles	Top- 4 stroke = 1.5mm side-6 Reg. = 0.8 mm
Rear conveyor Nozzles	6 one way stroke nozzles = 0.8 mm disc
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Tyre	8 ply rating
Tyre axel	3 way Adjustable
Safety devices	Chain coupling & PRV valve
Dry weight	820 Kg
Dimension	➤➤➤➤
L x W x H (M)	4.48 x 1.24 x 2.47



Advanced Features



1	Centrifugal Air Conveyor system at the back side of the machine	High Air output with lowest power consumption, More distance between Tractor operator & Centrifugal system reduces chemical exposure to operator.
3	Safety devices	Chain Coupling & Pressure Relieaf Valve
4	Air conveyor System	2 Centrifugal Impeller creating high amount of air
5	Spraying range	Vertical = 50 - 55 ft, Horizontal = 55 - 60 ft
6	Imported Tank	HDPE , 10 mm Thickness, Antichemical coating on Inner surface
7	4 Separate Tank Lead	Big lead for water filling
		Medium lid for Chemical Mixing Powder mixer fitted
		12 Lit handwash tank for cleaning
		115 lit Rinsing tank for cleaning tank & hydraulic circuite after spraying
8	Cross Agitation System	Excellent agitation of Chemical at the time spraying
9	Front & Side Water level Indicator	Front water level for tractor driver & Side water level at time of water filling
10	3-Way Adjustable Wheels	Trackwidth, Height, Tyre position forward & Reverse
11	Compact & Light weight Machine	Lowest Length= 12.25 ft , Width = 4 ft, Height = 8.1 ft, weight 820 kg
12	Material & Coatings	
	Chassis	HDG, Powder coating = Chassis, front Controller & Mounting Frame, Gear box mounting frame, Side Bar
		Centrifugal Impeller = HDG



	Hydraulic controller	Spray direction adjustment (Both Front & Rear Air conveyor system)
	Manul adjustment	One time manual spray direction adjustment option for Rear Air Conveyor Ststem
	Nozzle	16 one way stroke brass nozzles
		Rear Air Conveyor System: Side 6 Nozzle = 0.8 mm disc, Top 4 Nozzle = 1.5 mm disc
		Front Air Conveyor System: 6 Nozzle = 0.8 mm disc

AREA OF APPLICATION



Relevant Crops

- Tall Orchard Tree = Mango, Sapota, Teakwood, Oil palm, Date palm (Khajur tree), Coconut & Areca Nut
- Bush/ Shrub Crop = Tea plantation(Flat land), Ginger Plantation, Coffee plantation
- Greenhouse = Capsicum
- Floriculture = Tulip, Gerbera, Marigold, Chrysanthemum, Rose, Carnation, Anthurium

Pollution Control


- Dust Suppression = Coal Mines, Stone crusher plant, Air pollution control in metro cities

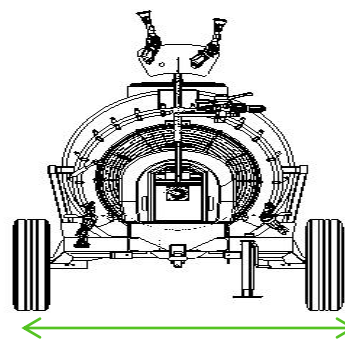
Suggested Survey Locations = Mango (GJ = Valsad, Nawsari, AP = Chittoor, Anantpur, Vijawada, Krishna

Coffee (KA = Chickmangalore, Kodagu (Coorg), Hassan)

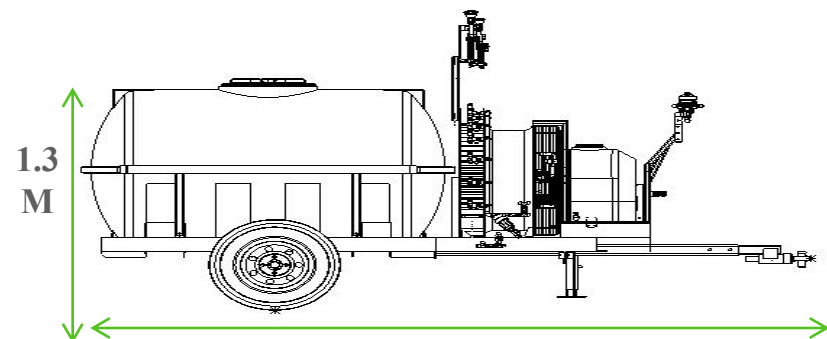
SUPERBLAST 1500

Technical Specification

Main tank	1500 lit
Handwash tank	10 lit
Fan	712 MM
Blade no.	9 PPG
Diaphragm Pump	75 LPM
Nozzle	14, M-82
Disc & ATR	0.8/1.0
Handgun	2/4 Hydra Guns
Gearbox	2 Speed + Neutral
Controller	5 mode manual controller
Tractor HP	40HP
Tyre axel	3 way Adjustable
Safety devices	Innova rubber coupling & PRV valve
Dry weight	650 Kg
Air output	38 m/sec or 137 Kmph
Dimension	
L x W x H (M)	3.7 x 1.6 x 1.3



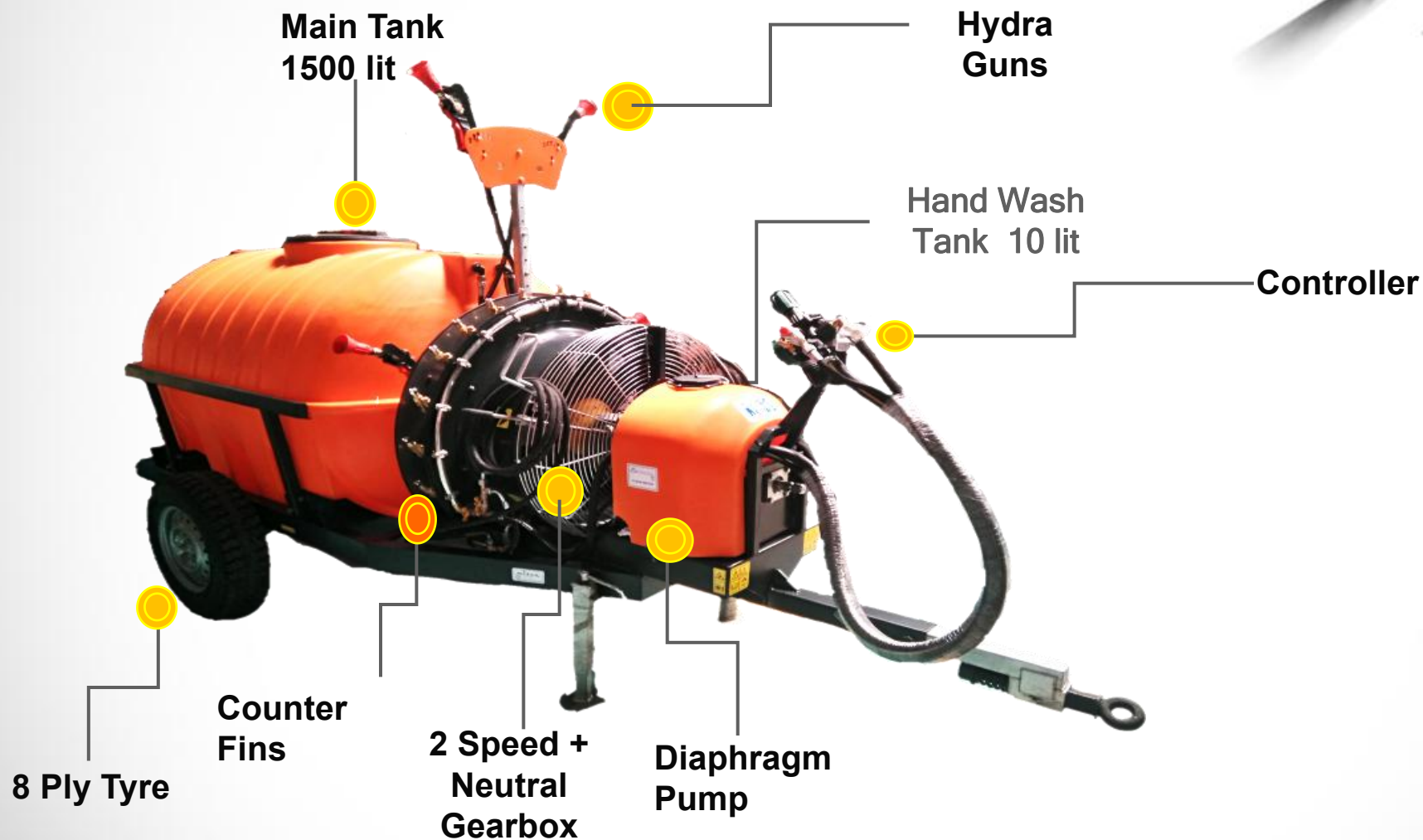
1.6 M



3.7 M



SuperBlast key parts & Applicable crops



Applicable Crop



Grape



Orange



Apple



Lychee



Olive



Peach



Plum



Pome

POMEMASTER LINEAR



- Dimension = L 9.5 ft x W 3.6 ft x H 5.7 ft
- Tractor HP = **24 HP & Above**
- PTO HP = 16 HP & Above
- Dry Weight = 380 kg
- Pump = 75 LPM Diaphragm Pump
- Fan diameter = 616 mm
- Air Flow = **Average 27000 m³/hr**
- Main Tank = 600 lit
- Rinsing Tank = 25 lit
- Hand wash Tank = 10 lit
- Gearbox = 2 Speed + Neutral
- Safety device = **Pressure relief valve(Pump),
Innova rubber coupling**
- Nozzle
+ ATR 60) = 12 Nozzle (1.0 Ceramic disc
- Controller = Manual Control Panel

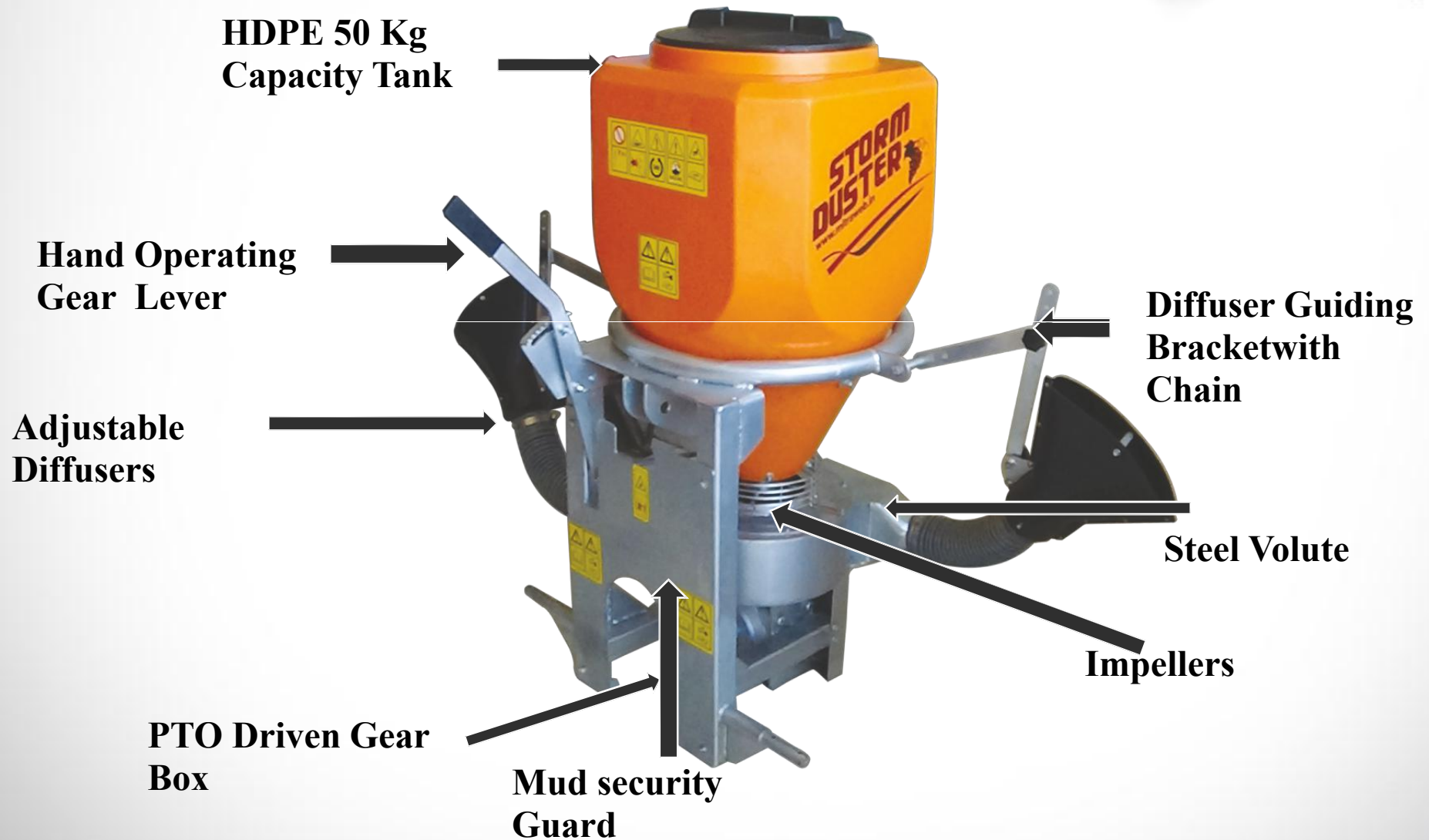


Salient Features



- Works freely on 24 HP and above tractors
- 100% Coverage
- Best in Crop Protection
- Can reduce spray rounds
- Good penetration inside the tree
- Manual control Panel
- 75 lpm Diaphragm Pump works smoothly Indian water
- Innova Cushion Rubber coupling work as shock absorber in Field
- 2 Speed + Neutral Gear box helps to choice in air output required as per climatologically as well as agronomical conditions

Storm Duster



Salient Features



- **Works on 15 and above HP tractor**
- **Best in Powdery Mildew, Downy Mildew protection & Mites**
- **No need of Pulley and belt b'coz of Best Gear Box**
- **Can dust from 2 Kg to 20 Kg per acre**
- **50 Kg capacity tank**
- **Mud protection guard plate to avoid insertion of mud in Volute .**
- **Adjustable Chain and Plate mechanism to adjust diffuser.**



CROPMASTER ECO

Advanced Features

- ✓ **Height Adjustment** - Easy adjustment for boom height adjustment up to 5 ft. from ground
- ✓ **Nozzle** - Two-way adjustable brass nozzle, adjustable nozzle spacing as per crop
- ✓ **Safety Device - PRV**: Reduces excess pressure from the Pump
- ✓ **Folding** - Light-weight and easy to fold
- ✓ **Filtration** - Suction filter for cleaning water from Tank to Pump(50 mesh)
- ✓ **Diaphragm Pump** - Specially designed for pesticide spraying application continuous water flow without pulsation
- ✓ **Mounting** - Easily mounting on 3-point linkage

Technical Specifications

- | | | |
|------------------|-------------------------|---------------------|
| • 200 Liter Tank | • 55 LPM Diaphragm Pump | • 20 ft Boom Span |
| • 12 Nozzles | • 0.8 disc / ATR 60° | • 120 Kg Dry weight |



Contact

11, Bhandari Plaza, Pimpalgaon Baswant,
Tal. Niphad, Dist. Nashik(Maharashtra)



www.mitraweb.in



8888200022



7744911119



CROPMASTER 200 LITERS

Features

Height Adjustment

Winch mechanism for Boom height adjustment up to 6 ft, Ergonomic operation

Nozzle

2- way Adjustable brass Nozzle

Adjustable Nozzle spacing as per Crop

Controller

5 mode manual controller , Smooth Operation, Strong controller mounting

Safety Device

PRV = Reduce excess pressure from pump

Back folding

Easy for operation in heighted crops. Ex = Cotton

Dual filtration

Suction filter 50 mesh & Brass filter 80 mesh

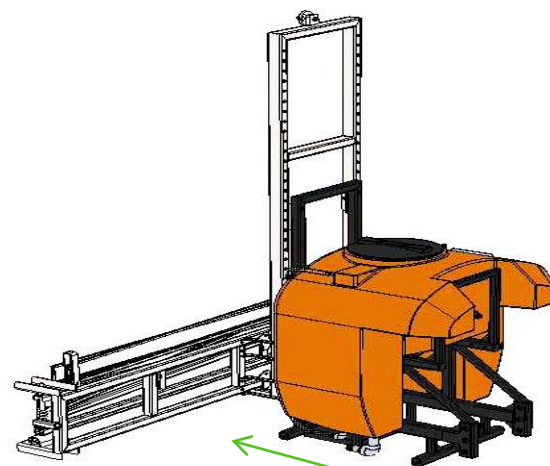
Diaphragm Pump

Specially designed for pesticide spraying application, Continuous water flow with ough pulsation.

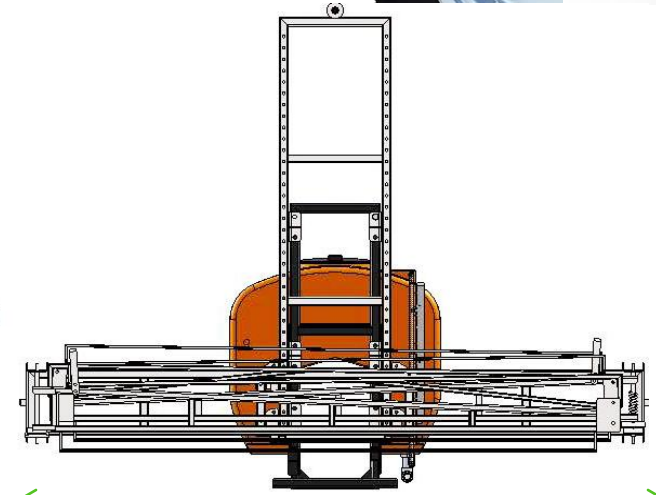
Dimension

L x W x H

3.7 ft x 8.6 ft x 6.7 ft



3.7 ft



8.6 ft

6.7 ft

Cropmaster 200 liter key parts

Technical Specification

Main tank	200 lit
Boom Span	30 ft / 24 ft
Height adjustment	2 ft to 6 ft from ground
Diaphragm Pump	55 LPM
Nozzle	20 / 12 Nozzle
Disc & ATR	0.8 disc / ATR 60°
Controller	5 mode manual controller
Safety devices	Pressure relief valve
Nozzle Spacing	Adjustable Maximum 600 mm
Dry weight	230 Kg
Tractor	24 HP & Above (Dry weight must be 1000 kg & Above)

Back folding Boom

Height Adjustment

Main Tank 200 lit

Controller



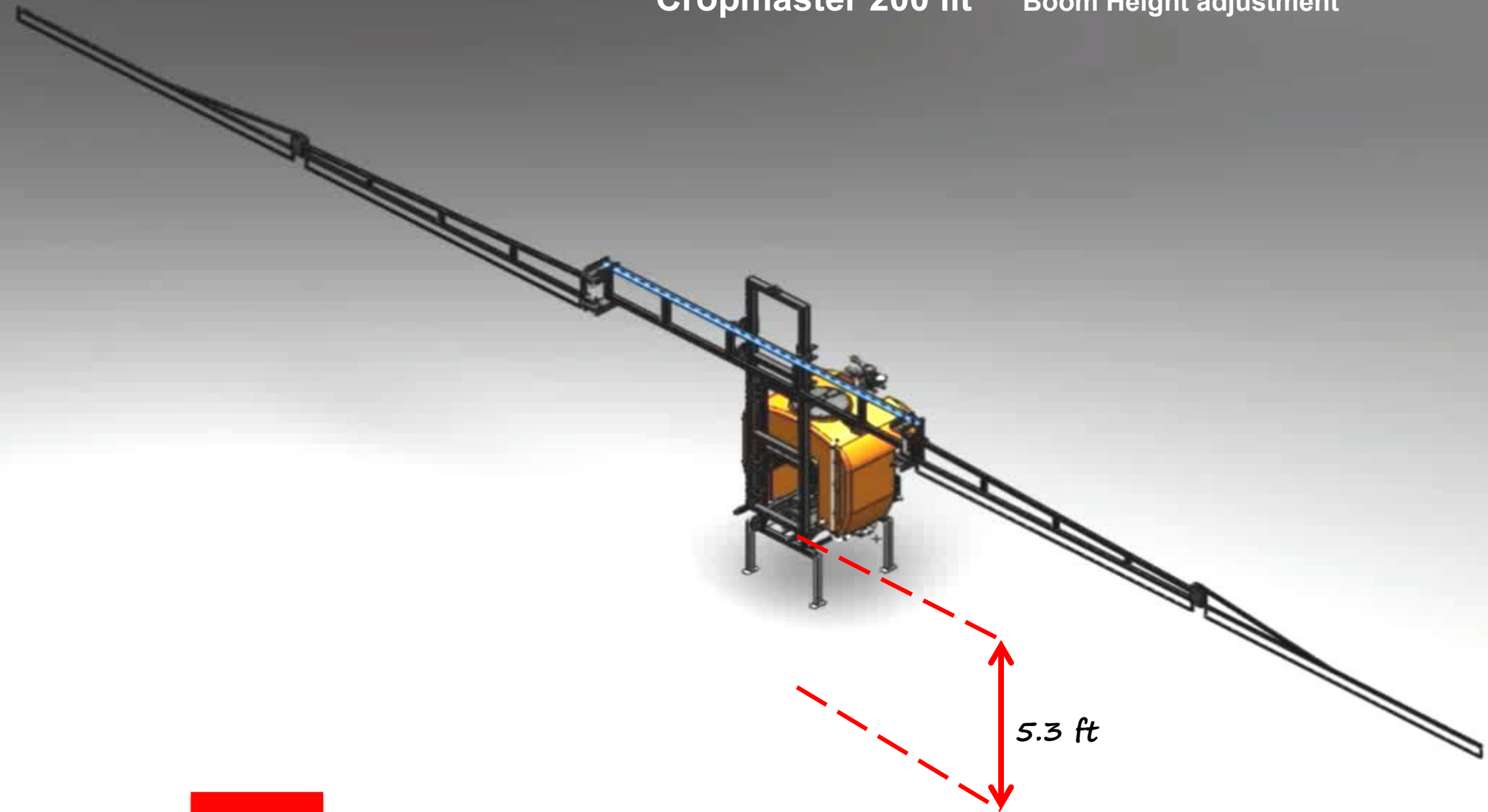
2 Way Adjustable Brass Nozzle

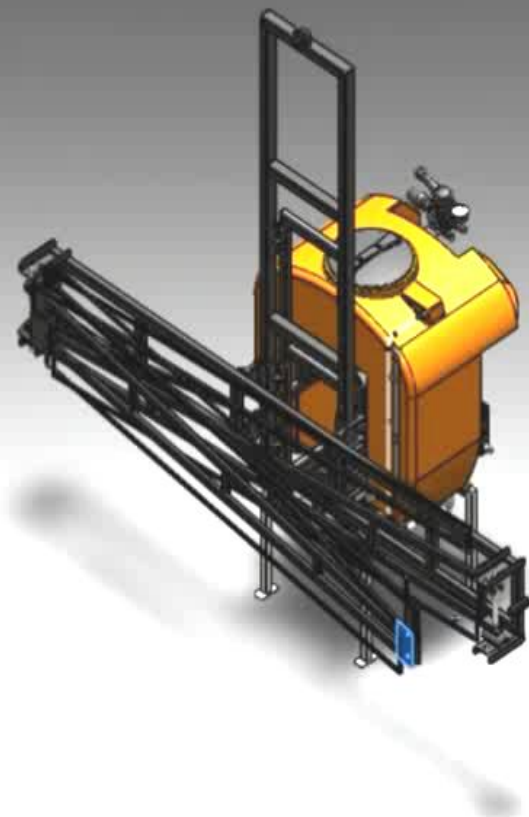
Mounting Pin with Bush

Suction Filter 50 Mesh

Cropmaster 200 lit

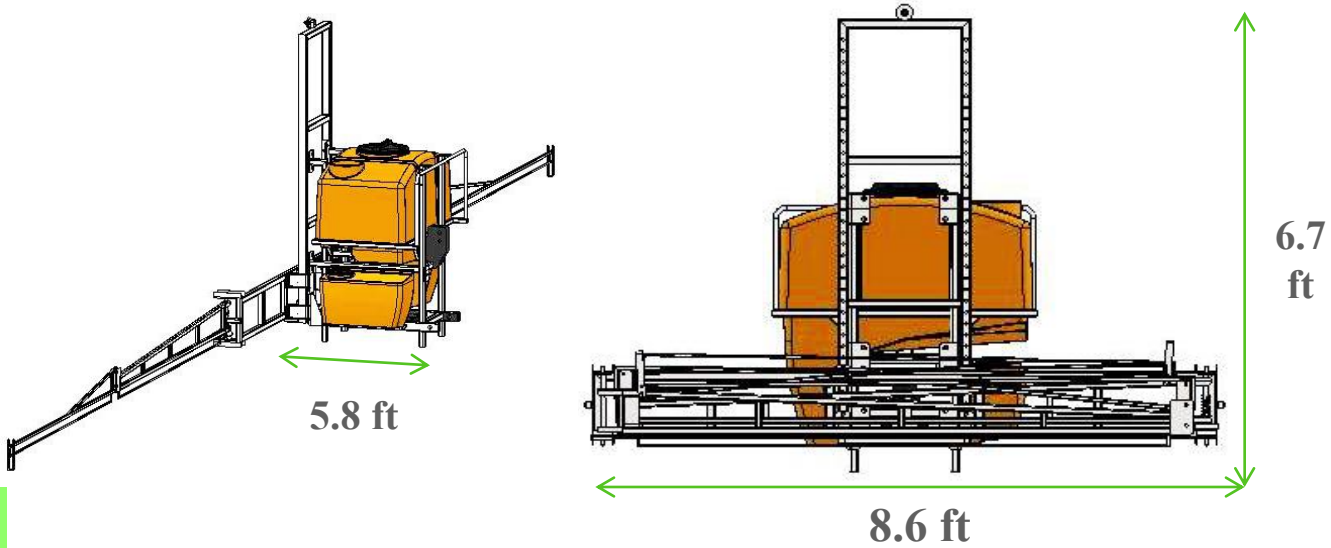
Boom Height adjustment





CROPMASTER 400 LITERS

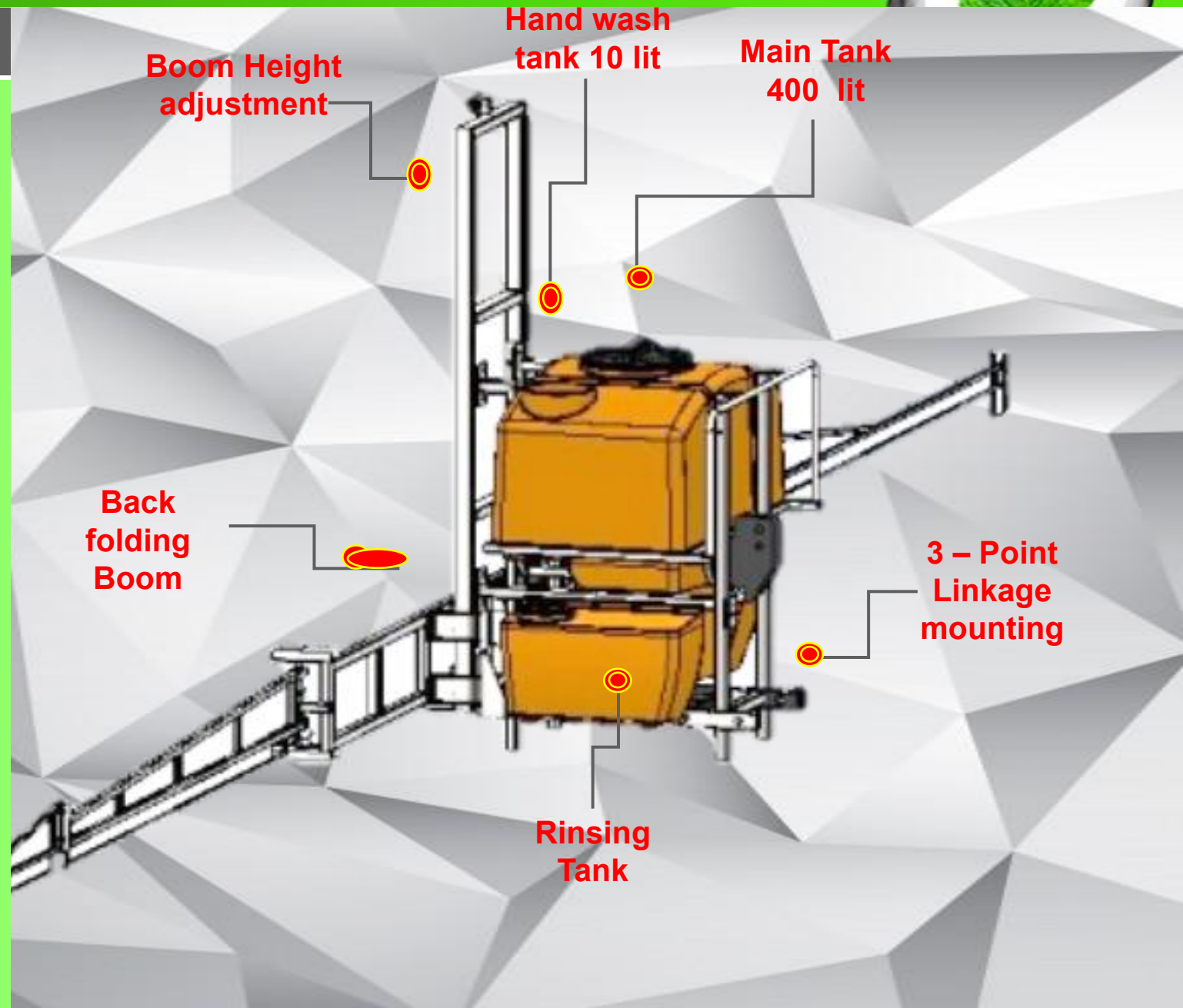
Height Adjustment	Winch mechanism for Boom height adjustment up to 6 ft, Ergonomic operation
Nozzle	2- way Adjustable brass Nozzle
	Adjustable Nozzle spacing as per Crop
Controller	5 mode manual controller , Smooth Operation, Strong controller mounting
Safety Device	PRV = Reduce excess pressure from pump
Back folding	Easy for operation in heightened crops. Ex = Cotton
Dual filtration	Suction filter 50 mesh & Brass filter 80 mesh
Diaphragm Pump	Specially designed for pesticide spraying application, Continuous water flow with ought pulsation.
Dimension	L x W x H
	5.8 ft x 8.6 ft x 6.7 ft



Cropmaster 400 liter key parts

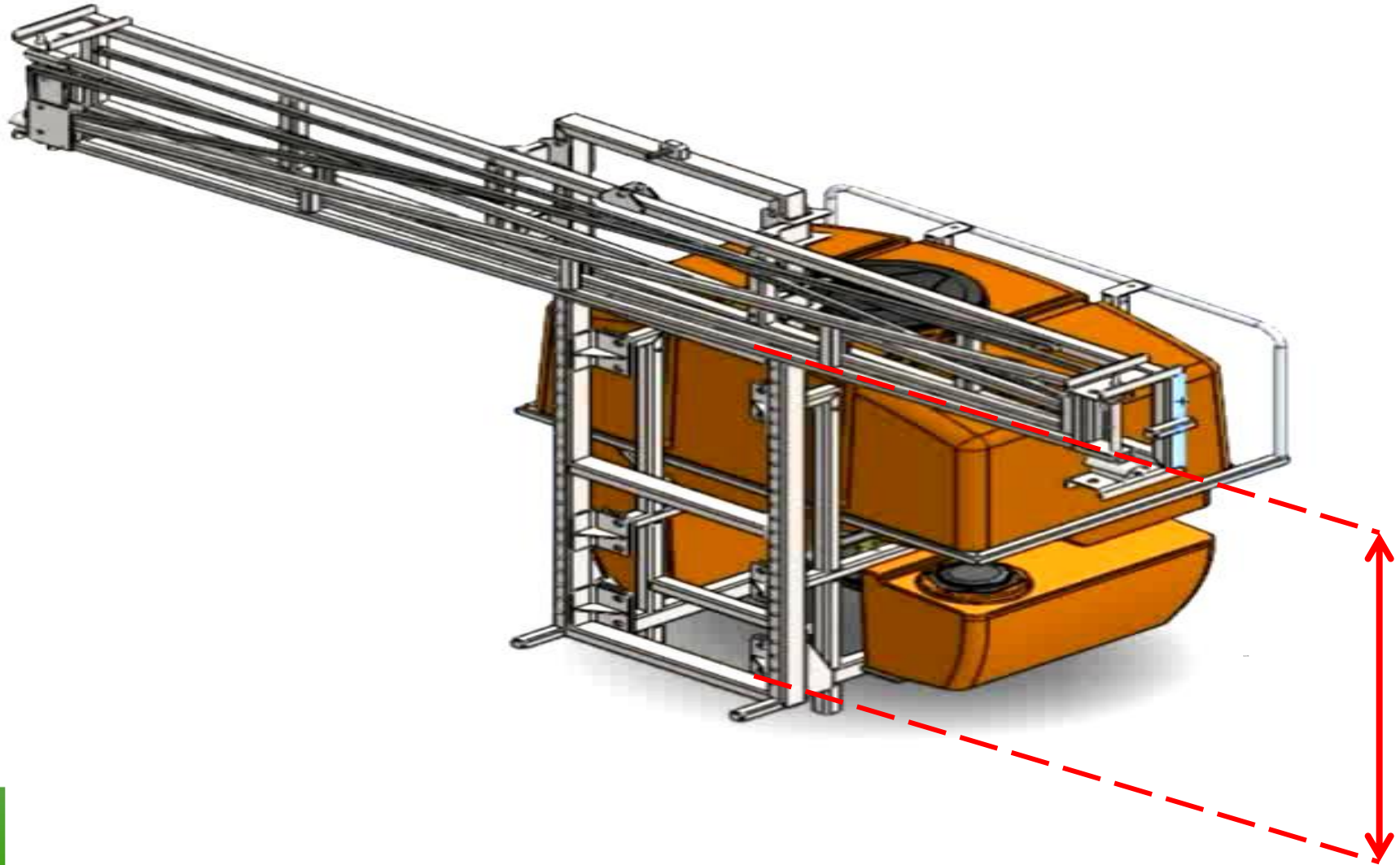
Technical Specification

Main tank	400 lit
Rinsing Tank	25 lit
Hand wash Tank	10 lit
Diaphragm Pump	55 LPM
Nozzle	24
Disc & ATR	0.8 disc / ATR 60°
Controller	5 mode manual controller
Nozzle Spacing	Adjustable Maximum 600 mm
Safety devices	Pressure relief valve
Dry weight	250 Kg
Boom Span	40 ft
Height adjustment	2 ft to 6 ft from ground



Cropmaster 400 lit adjustment

Boom Height

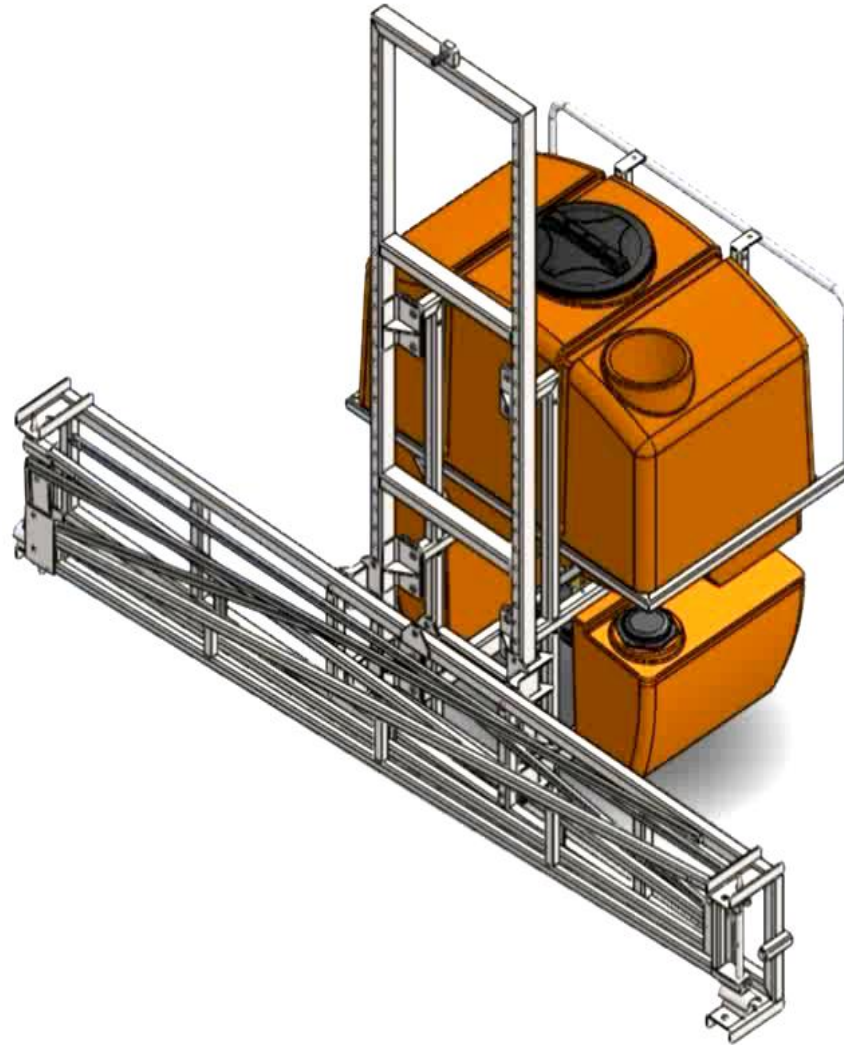


Video



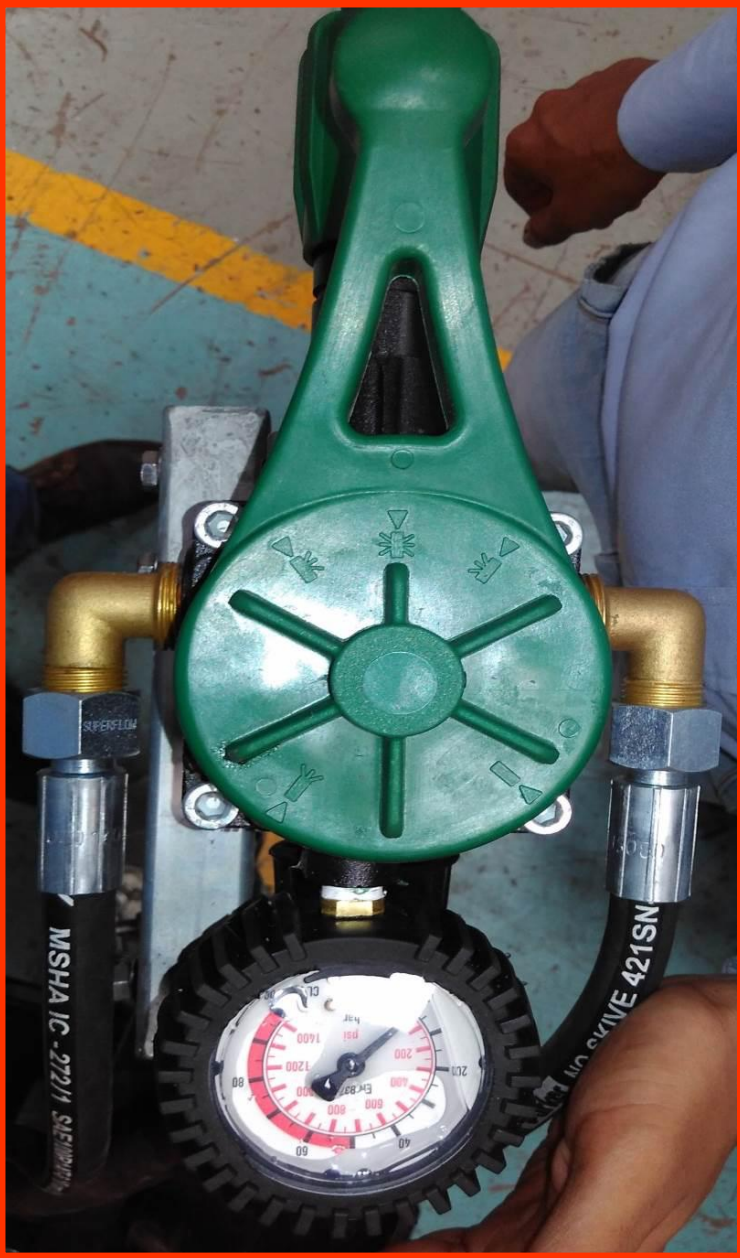
Cropmaster 400 lit

Boom Unfolding



Sr.No	Crop	Grapes	GM Airotec	GMBlast+	GMBullet++	GMBullet+	GMEco+	GMEco++
		Pomegranate	PM Airotec	PMLinear+	PMRocket++	PMRocket+	PMEco+	PMEco++
1	Parameters	Fan Dia	616 mm	616 mm	616mm	550mm	550mm	616mm
2		Pump Capacity	75LPM (udor)	75LPM(udor)	65LPM(udor)	55LPM(udor)	55LPM(APS)	71LPM(YP)
3		Tractor HP	24 HP & Above	24 HP & Above	24 HP & Above	18 HP & Above	18 HP & Above	24 HP & Above
4		Type	Trailed	Trailed	Mounted	Mounted	Mounted	Mounted
5		PTO Shaft	Wide angle	Wide angle	Straight Angle	Straight Angle	Universal Joint	Universal Joint
6		No of Nozzles	12	12	12	10	10	12
7		Extra Tank Attached	NA	NA	Yes	Yes	Yes	Yes
8		Tank Capacity	600 Litters	600 Litters	200 Litters	200 Litters	NA	NA
9		Basket Mixture	Present	Present	Present	Present	NO	NO
10		Agitator	Present	Present	Present	Present	NO	NO
11		In-late vanes/Recovery Plate	Present	Present	Present	Present	NO	NO

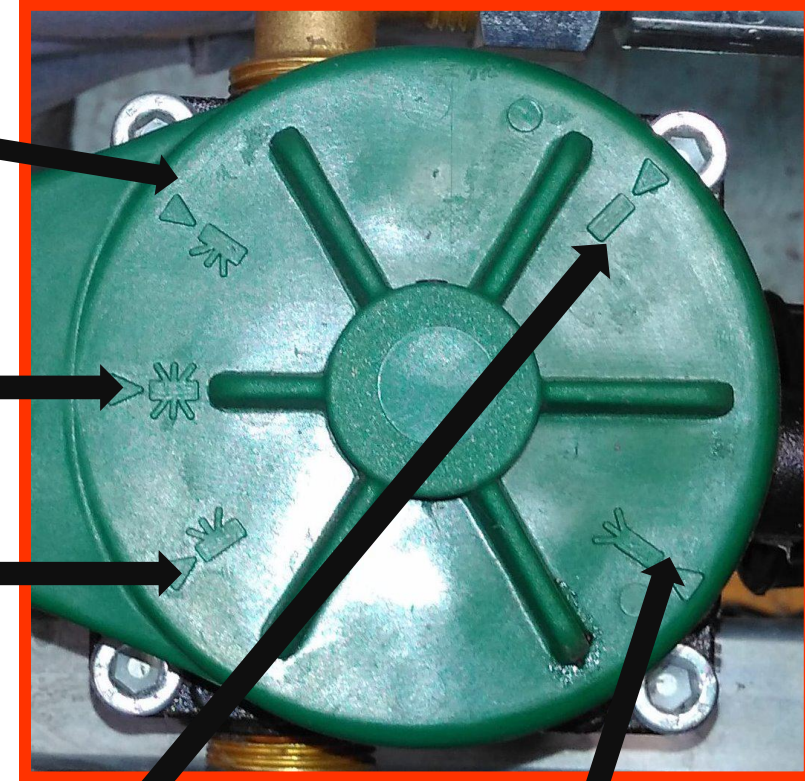
Udor Controller



Right side

Both side

Left side



Press mode

Bypass mode

FARMET CONTROLLER



Imported Controller



Right side

Both side

Left side



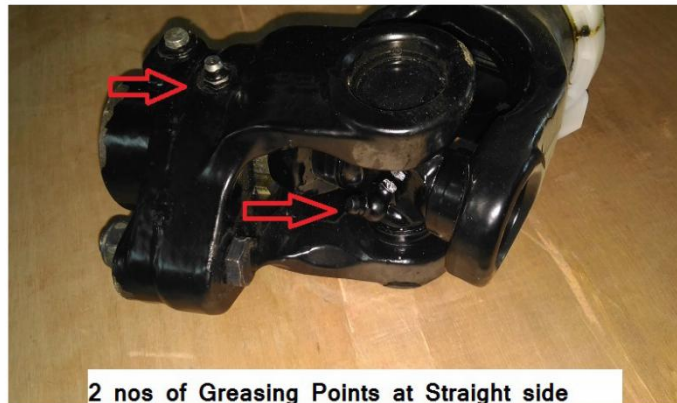
Press mode
/ 'C' mode

Bypass modes
/ 'R' modes



Guide Poiner

Wide-angle PTO Shaft for Blast +

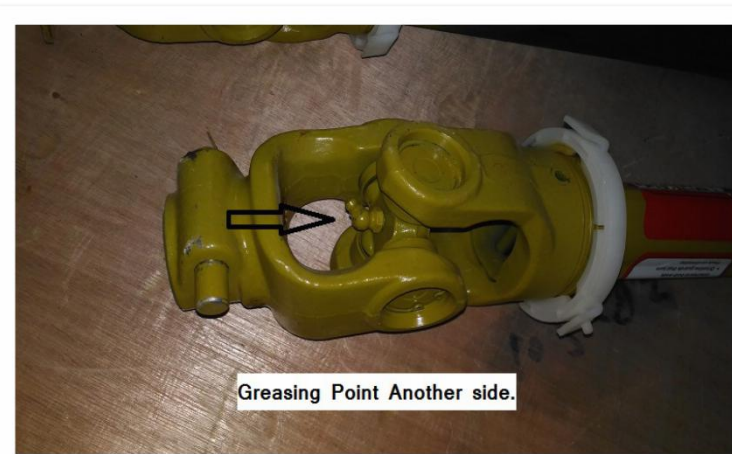


2 nos of Greasing Points at Straight side



3 nos Greasing Points at Wide angle side

Straight-angle PTO Shaft for Bullet+& Bullet ++



Universal Joint



FAN



1. **Blade material** = PPG (Glass fiber reinforced polypropylene)
2. **Number of Blades** = 9
3. **Fan Diameter** = 450mm, 550 mm, 616mm & 712 mm



Air flow reading



Bullet 550 Air flow Calculation			Bullet 616 And Blast 616 Air flow Calculation		
Main Duct area =	2000 X 90	180000 mm ²	Main Duct area =	2040 X 120	244800 mm ²
Recovery Duct are =	900 X 25	22500 mm ²	Recovery Duct are =	880 X 27	23760 mm ²
Total Area =	180000+22500	202500 mm ²	Total Area =	244800 + 23760	268560 mm ²
Total Area =		0.202500 m ²	Total Area =		0.268560 m ²
Air Velocity =	20.97 m/sec		Air Velocity =	22.41 m/sec	
Air flow =	0.202500 x 20.97	4.24642 m ³ /sec	Air flow =	0.268560 x 22.41	6.01843 m ³ /sec
Air flow =	4.24642 X 3600	15287 m ³ /Hr	Air flow =	6.01843 X 3600	21666.35 m ³ /Hr

Suction Filter



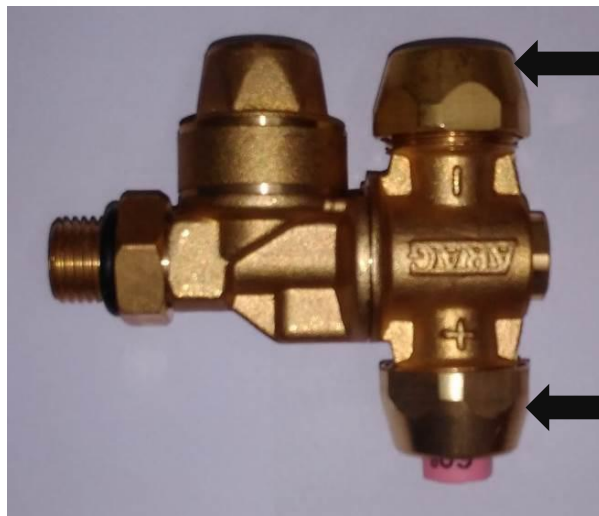
Arag



Nozzle - Arag



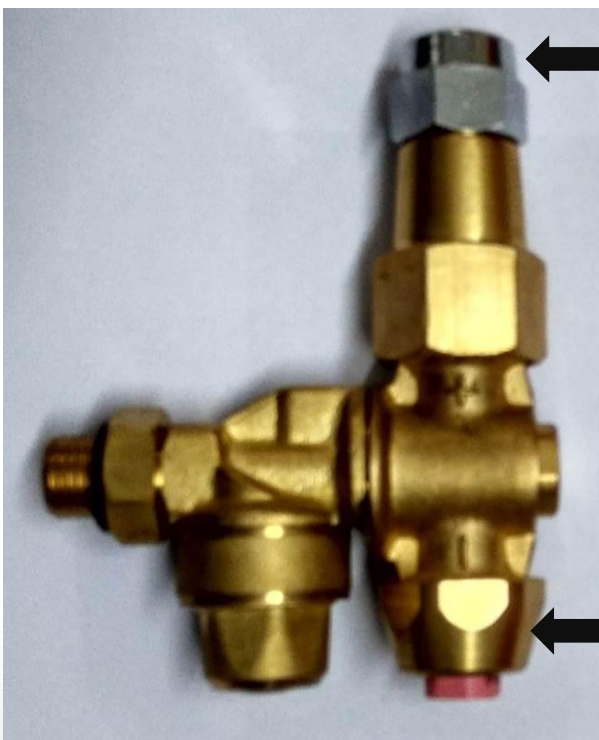
M-62 (Small nozzle)



← **1.0 Disc**

← **ATR 60**

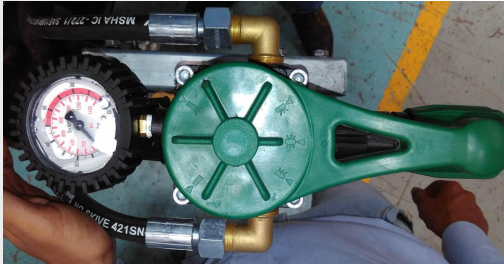
M-82 (Stroke nozzle)



← **1.0 Disc**

← **ATR 60**

Photos for Information



Keep Pressure regulator at Min. Pressure before start the pump.



Keep nozzles & Discs cleaned before every spray.



Keep Controller in BYPASS mode in start for 4-5mins

Hollowcone ceramic disc (ATR 60) with o-ring



Replaced the o-ring and tight slightly in case of ATR leaking; do not over tight.

Ceramic discs 0.8mm, 1.0mm & 1.2mm.



Change discs / Plates if needed as per discharge required.

Hollowcone ceramic disc



Do not use ATR60 above 20Bar

Pump



Company name = Udor
Pump flow distribution Sheet.

	75 LPM Pump			65 LPM Pump	
	Condition = 450 RPM , Pressure =40 Bar			Condition = 450 RPM , Pressure =40 Bar	
1	Total discharge of Pump	57 lpm		Total discharge of Pump	48.32 lpm
2	12 Nozzle discharge	27.98 lpm		12 Nozzle discharge	28 lpm
3	2 Agitator	6.66 lpm		2 Agitator	5.68 lpm
4	Return	23.64 lpm		Return	14.72 lpm
				Less HP consumption	
1	Hp consumption	6.6 hp		Hp consumption	5.3 hp

Gearbox



Gear Ratio :

1. Low gear = **1 : 4**
2. High gear = **1 : 5**
3. Neutral gear = **Use in Flowering stage**

Two speed Gear-Box 2



Ratio

Low gear = 1 : 4

High gear = 1 : 5

1. Gears teeth count

50/10 H, 48/12 L

**2. Neutral gear = Use in
Flowering stage**

**3. Oil Level upto level
mark**

**4. Use SAE 90 oil in
Gear box**



Suction Filter & Brass filter



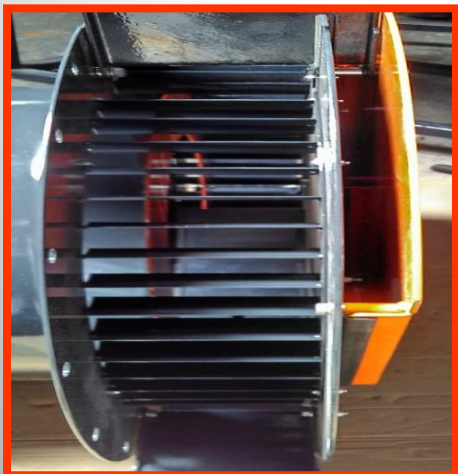
1. Both located right side of machine.
2. Suction filter = size = 50 mesh
3. Brass filter = size = 80 mesh

Air conveyor system



In-late Vanes :

Air balancing at the time of suction.



Counter Fins:

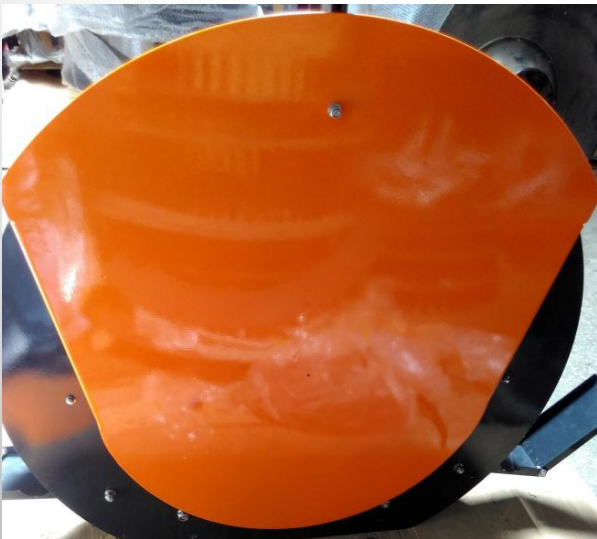
Divide air equally across LHS & RHS side.

Air conveyor system

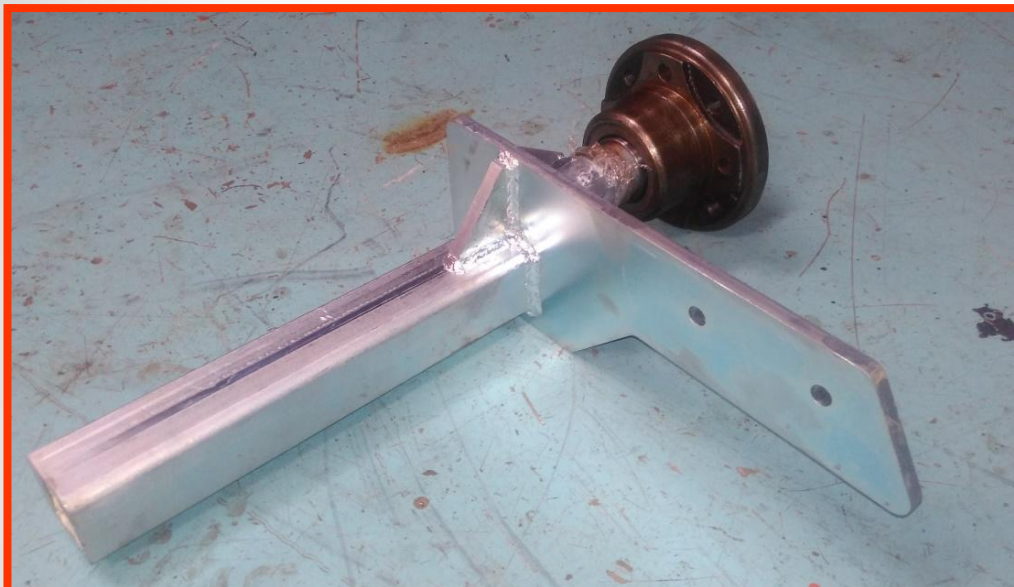


Air Recovery plate :

- The air which present at the bottom side goes waste and create turbulence.
- We remove this air by this Air recovery duct and direct towards up side.
- So it gives supports to top air and increase the vertical reach of spray.



Adjustable Tyre



Each tyre can 75 mm extend outward.

Minimum track width = 935 mm

Maximum track width = 1085 mm





Competition



CURRENT MARKET SCENARIO



❖ Prominent Players in a sprayer market

High Volume	Low Volume	Ultra-low Volume
<ul style="list-style-type: none"> • Dragon • Caffeine trend reverse • Indroget • Maggio • Boraste 	<ul style="list-style-type: none"> • CIMA • VMA • Martignani 	<ul style="list-style-type: none"> • ESS • On-target

❖ Spraying Technologies present in market

Air Blast / Air assisted		Air compression
High Volume	Low Volume	Ultra Low Volume
> 120 lit/ Acre	60 – 120 lit/ Acre	< 50 lit/ Acre
Nozzle	Diffuser	Nozzle
Fan - Axial	Centrifugal fan	Compressor
High Pressure	Low Pressure	Low pressure
10 to 40 bar	2 to 5 bar	2 to 5 bar



Machines

Demerits of Competitors

Dragon and Caffeine trend reverse.



1. Only applicable for spraying, dipping not possible.
2. High power requirement (2400 to 2600 RPM), Air balancing not proper.
3. High price 4.60 to 4.80 lakh
4. Service & Spare part not easily available.

CIMA



1. Low volume technology (100–120 lit/acre), Only use for dipping.
2. High power required due to centrifugal fan (30 HP)
3. Machine operating is not User friendly, required skill labour.
4. High price 6 lakh, Service & spare part not easily available.
5. Low volume technology not suitable for Indian Hot weather & Dense canopy
6. Not able to control “Downy” & “Powdery mildew”

ESS



1. Ultra low volume technology (50 lit/acre), Only use for dipping.
2. Machine operating is not User friendly, required skill labour.
3. Frequent maintenance of compressor (2.5 lakh)
4. Very costly 18 to 21 lakh

Caffini



Caffini Double Fan

- Double fan takes double load
- Heaviest machine on field more than 450 kg weight.
- Require 2500 RPM for tractor to work on field
- No mud removing scrappers
- Backside Fan losses more power

Comparison of machines

Points	Grapemaster Bullet +		Local Blower
	Minimum	Maximum	
1. Air output	13000 m3/hr	16000 m3/hr	5000 m3/hr
2. Coverage	100%	100%	45%
3. Maintenance	Negligible	Negligible	<ol style="list-style-type: none"> 1. Washer damage 2. Belt Damage 3. Rusting Problem 4. Weak Hydraulic connection 5. Improper filtration 6. Nozzle blockage 7. Vibration causing damage to pump 8. Damage to Fan 9. Disturbance in alignment of Fan blades 10. Weak hardware/ fasteners cause re-maintenance difficult
4. Workload	18 HP	50 HP	18 HP
5. Spare Parts	Imported	Imported	Local
6. Weight	210 KG without water	380 KG after filling water	200 KG (avg) ,400 KG (avg)
7. Dimensions	1355L x 915W x 1425H (mm)		
8. Look	Smart		Dull Look
9. Works on	18 HP freely		18 HP taking little load
Hydraulic Circuit pipe capacity	Minimum 120 Bar	Maximum 180Bar Hydraulic circuit	Local Hydraulic circuit maximum 40-60 Bar approx
11. Pump	55 LPM Diaphragm		35 LPM piston pump
12. Controller	Italian Arag controller		Local operating system
13. Discharge	100 ltr/acre	600 ltr/acre	200 ltr/acre to 600 ltr/acre
14. Mounting	Easy and one hand		Difficult and require 2-3 peoples
15. Droplet Size	100μ	250μ	200-300μ (variation)

Comparison of machines



Weak Points of Martignani

Low volume Technology

Poor In crop Protection

Taking Load on 24 HP Tractor as it is designed for 29HP

Require 2500 Tractor RPM to run

Required very skill person to operate

Not able to control "Downy" and "Bhuri" easily

Can do only dipping

Polyethylene Tank

Weak Points of VMA

Low volume Technology

Poor In crop Protection

Taking Load on 24 HP Tractor as it is designed for 29HP +

Require 3000 Tractor RPM to run

Required very skill person to operate

Not able to control "Downy" and "Bhuri" easily

Chain drive system requires high power to operate

Cannot adjust separate diffuser

Uneven droplet size after certain discharge limit

More weight & more turning radius

Polyethylene Tank

Comparison of machines



Weak Points of Lusna 600 Ltr

Only Spraying , No Dipping

Air balancing problem. No ECT & counter fins

No reverse Trend in Fan. Fan material is steel

Pump requires air filling at regular intervals

Air output is less than requirement 12000m³/hr at stationery condition

Low ground clearance 20 cm

Fan is at backside. Takes load on 24 HP tractor

Scraper is not proper to remove mud

Improper control panel

Only 10 Nozzles (5+5)

Fiber glass tank, No Bumper

Deflector plates are very small & short which causes air losses from downward side

Weak Points of Indrojet

Air balancing problem. No counter fins

Fan material is Aluminum

Sucks more dust, downy, bhuri particles, leaves etc

Only 10 Nozzles (5+5)

No Bumper

No scrapper

Polyethylene Tank

Comparison of machines



Weak Points of Caffini Trend Reverse	Weak Points of Dragon
Heavy weight 450 kg which causes damage to roots	Air balancing problem. No counter fins
Height is more than 4 ½ ft causes damage to the grapes	Fan is at backside. Long shaft. Losses in power transmission
Fan is at backside. Long shaft. Losses in power transmission	No Innova cushion rubber coupling for seafy pump and other parts
No galvanized chassis so rusting happens	No safety relief valve
Control panel is not user friendly	Recovery duct not present then bottom side air loses
No Innova cushion rubber coupling for seafy pump And others parts	Heavy weight 480 kg which causes damage to roots
No safety relief valve	
Long turning radius	

WHY M.I.T.R.A.?



Best Machine, Best Service,
Best Price

Best Machine



- Multipurpose Machine can work for Dipping, thinning & spraying.
- 100% coverage thus reducing number of spray rounds
- International Technology Indian design.
- Zero maintenance.
- Work Suitability for 18 to 45HP tractor for different model
- Best in Dipping/PGR Application & Crop protection
- Integrated control Panel, easy to handle.
- Diaphragm Pump works smoothly with Indian water and spraying chemicals
- Reverse Trans Technology Fan restrict Dust, Dirt and leaves to enter in fan which results in pure spraying
- Very good Air Conveyor system for equal distribution of air at all sides with turbulent air flow.
- Innova Cushion Rubber coupling work as shock absorber to protect pump
- 2 Speed + Neutral Gear box helps to choice in air output required as per climatologically as well as agronomical conditions
- Mixing Mechanism with two agitators & basket.
- Scraper to remove mud easily.
- Suitable dimensions, easy to work in Grapes as well as pomegranate

BEST SERVICES



Dedicated service team

Routine preventive maintenance by skilled service engineers

Easy availability of spare parts at economical prices Resolve problem within 24 hours with door step service.

Standby machine service facility available

Periodic customer training

Service campaigns

Company complaint contact number is available for 24 x 7



Best Price



- Best price as per Market Situation
- Best value for money
- Low price as compared to imported machines
- High Return on Investment





STANDARD OPERATING PROCEDURE FOR AIR FLOW MEASUREMENT



Step Number	Photo	Description	Remark
1		<p>ANEMOMETER FOR MEASURING AIR FLOW IN M/S SHOWING READING IN CONTROL PANEL</p> <p>FAN ROTOR BLADE UNIT</p>	
2		<p>TAKE 500MM LENGTH WIRE ROD AND FIT ITS ONE END TO ANNEMOMETER AND OTHER END TO BE FITTED AT NOZZLE CENTRE.</p> <p>ADJUST THE ANNEMOMETER LOCATION IN THE PLANE OF ALONG THE TRACTOR AND NOTE MAXIMUM AIR FLOW READING . FOLLOW SAME PROCESS FOR ALL NOZZLE POSITION AND TAKE AVG READING WHICH MUST BE MINIMUM 12.5 M/S.</p>	NOTE DOWN AIR FLOW READING WHICH IS METER PER SECOND
3		<p>ARROW MARKED ON FAN ROTOR BLADE UNIT IS INDICATING AIR FLOW IN UNIT</p>	ENSURE FAN ROTOR BLADE UNIT IS HOLD PROPERLY




STANDARD OPERATING PROCEDURE FOR NOZZLE DISCHARGE MEASUREMENT



Step Number	Photo	Description	Remark
1		SET PRESSURE AT WHICH NOZZLE DISCHARGE TO BE TAKEN, PRESSURE IS TO BE IN BAR	
2		PUT AND PRESS CAP ON THE NOZZLE WHERE SPRAY IS COMING OUT AND ENSURE THAT THERE SHALL NOT BE ANY LEAKAGE	
3		INSTRUMENT FOR MEASURING DISCHARGE RATE IN LPM HAVING FLOAT INSIDE IT	
4		BLACK COLOURED FLOAT IS STABILIZED AT CERTAIN POSITION AND NOTE DOWN THE LPM READING AT THE SCALE INLINE WITH THE FLOAT	

STANDARD OPERATING PROCEDURE FOR RPM MEASUREMENT



Step Number	Photo	Description	Remark
1		<p>TACHOMETER INSTRUMENT FOR MEASURING ANGULAR SPEED IN RPM, READING IS SHOWING IN CONTROL PANEL. SET INSTRUMENT ON RPM MODE</p>	
2		<p>PASTE WHITE COLOURED REFLECTIVE STICKER ON PART FOR WHICH RPM IS TO BE MEASURED LIKE PTO, FAN</p>	
3		<p>LASER BEAM (RED) IS FOCUSED ON THE REFLECTIVE STICKER PASTED ON PTO; NOTE DOWN READING SHOWN IN CONTROL PANEL AFTER STABILIZATION</p>	

Process to use water sensitive papers



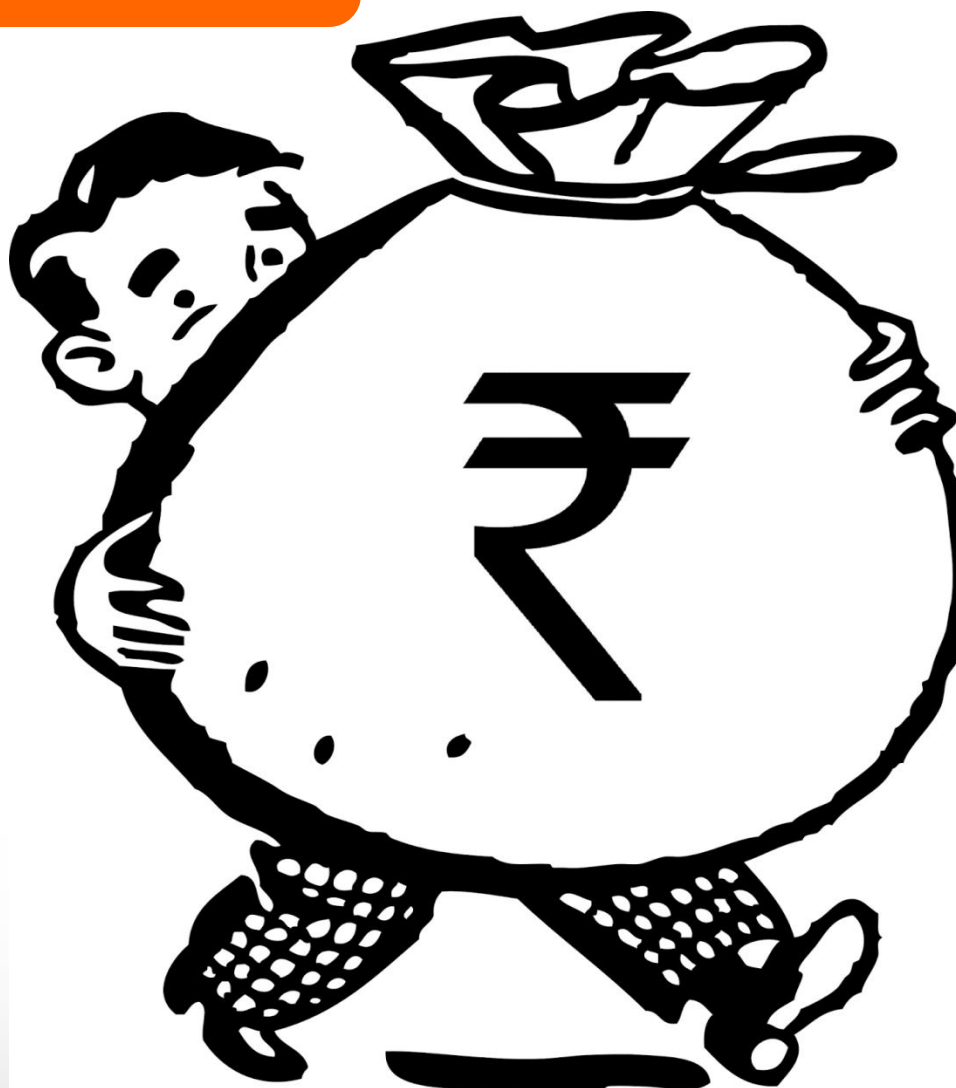
- Take two tractors having same Hp capacity
- Mount MITRA machine on one tractor and other competitor machine on other tractor
- Adjust same tractor rpm , same pressure, same gear on both tractors
- Then take water sensitive papers with taking care that paper should not touch by moist hand
- Then cut that papers into 4 parts
- Then go to plot and select row then select the plant after 4 to five plant after starting of row
- Then select the lower leaf , middle leaf and upper leaf in the canopy of that plant and stapled sensitive papers in same way as before in canopy
- Then make same arrangements in other row by making gap of 3 to 5 rows
- Then it is ensure that two tractors having same rpm , same gear on both tractors, having same pressure
- After demo take out water sensitive papers carefully and first observe yourself. If it is ok then stick those papers on blank paper. Then write position of water sensible paper below each sample with different tractor.
- See the comparison of droplet size and coverage of both machines and show to farmers.

COMPARISON BETWEEN PISTON AND DIAPHRAGM PUMP



Category	HTP Piston Pump	Diaphragm Pump
Flow	Pulsating Flow	Continuous Flow
Suitability	Not Suitable for Spraying	Most suitable for Spraying
Maintenance	High & regular because the chemical to be sprayed enters into internal parts of the pump	Zero because the diaphragm restricts the chemical to enter into internal parts of the pump
Life	3 to 5 years	10 to 15 years

Saving Calculations



Saving Calculations on Grapes per acre using Grapemaster



Sr no	Blast / Bullet +	Cost Savings
1	Dipping/ Plant Growth Promoters	3 Dipping – Rs. 3000/dip = 9,000/-
2	100% coverage	Minimum savings of 2 sprays behind 10 sprays. As min 50 spray are required. Thus total saving of 10 sprays Rs .2000/ spray = 20,000/-
3	Keeping quality	Min Rs.3/kg increase in the rate of grapes 10 tons production . = 30,000/-
	Aprox. Total savings per acre = 9,000+ 20,000+30,000 = 59,000/ acre.	

Saving Calculations on Pomegranate per acre



Sr no	Blast / Bullet ++	Cost Savings
1	100% coverage	<p>Minimum savings of 2 sprays behind 10 sprays. As min 25 spray are required. Thus total saving of =</p> $5 \text{ sprays} \times 2000 = 10,000/-$
2	Keeping quality	<p>Min Rs.5/kg Increase in the rate of Pomegranate</p> $= 12 \text{ Tons} \times 5 = 60,000/-$
	<p>Total savings per acre = 10,000 + 60,000 = 70,000 Rs/ acre</p>	

Saving Calculations for Oranges per acre



Sr no	Mitra Machine	Cost Savings
1	100% coverage	30-40 % Chemical saving than manual method Avg.15 spray / year, from this 4 spray can reduce. Cost saving = 4 sprays x Rs 2000 = 8000/-
2	Labour Saving	In Manual method = 3 labour covering 2-3 acre / day Mitra Machine = only 1 labour who drives tractor.
3	Time Saving	Field capacity/coverage area = 15 min / acre 8 hr daily working = 32 Acre coverage
4	Keeping quality	Min Rs. 2/kg increase in the rate of Oranges = 20 tons x 2 = 40,000/-
	Total savings per acre = 8,000 + 40,000 = 48,000 Rs/acre	

Orangemaster Blast + =

Video link



Orange Master Blast+ in Orange,Kinnow, HD Mango.mp4

Saving Calculations for High density Mango per acre



Sr no	Mitra Machine	Cost Savings
1	100% coverage	20-30 % Chemical saving than manual method Avg. 6 Spray/ year, From this 2 Spray can reduce. Cost Saving = 2 sprays x Rs 3500 = 7,000/-
2	Labour Saving	In Manual method = 3 labour covering 2 acre / day Mitra Machine = 1 labour who drives tractor.
3	Time Saving	Field capacity/coverage area = 12 min / acre 8 hr daily working = 40 Acre coverage
4	Keeping quality	Min Rs. 6 /kg Increase in the rate of Mango = 4 tons x 6 = 24,000/-
	Total savings per acre = 7000 + 24,000 = 31,000 Rs/ acre	

QA Testing



Sr. No.	M/C QA Inspection	Parameter	Benefit
1	Air Velocity Measurement	Air Velocity	Best coverage lead to best protection from Disease
2	Air Velocity distribution	Air Velocity Equal on Both the side	Equal Coverage on Both the side
3	Nozzle Discharge Measurement	Nozzle Discharge in LPM	Equal amout of fluid spraying
4	Gearbox Testing	Noise & Leakage testing	Long life of Gearbox
5	M/C Testing on VFD	Long time running	Durability test ensures long life of m/c
6	Tractor Loading Data	Engine RPM Drop Measurement	Consistent Fuel Consumption

M/C Performance Testing



**Air Velocity
Measurement**



**Nozzle Discharge
Measurement**



M/C Testing on VFD

Air Volume Calculation for Grapes



Here we take,

Area = 1 Acre = 4000 m²

Canopy Height = Total Height - Stem Height = 7.4 - 2.25 = 5.15 ft

Canopy Height 2.25

Volume = Area × Height = 4000 × 1.56 = 6250 m³

X Height = 4000 × 1.56 = 6250 m³

Tractor takes average 30 min to cover 1 acre

So Air Volume Requirement per acre (Canopy Volume)

= 6250 m³/30min = 12500 m³/hr

What we want from Sprayer



Coverage :

1. Water volume & Deposition- 70-600 lit/ac
2. Droplet Size- 100- 350 micron
3. Air Volume –12,500 M3/ Hr for grapes & 17500 M3/Hr for Pome
4. Air Velocity- 10- 20 m/sec

Environment Condition: Delta T – Below 12

Practical Condition:

1. Tractor Compatibility- Mitsubishi 18 HP
2. Fuel Consumption- Minimum

Field Dimension Requirement for Grapes :

- Height of machine:- Less than 4.5 feet
- Width of machine :- Less than 4 feet Tyre
- Line :- Adjustable for different tyers
- Turning radius :- Less than 9 feet



Thank you